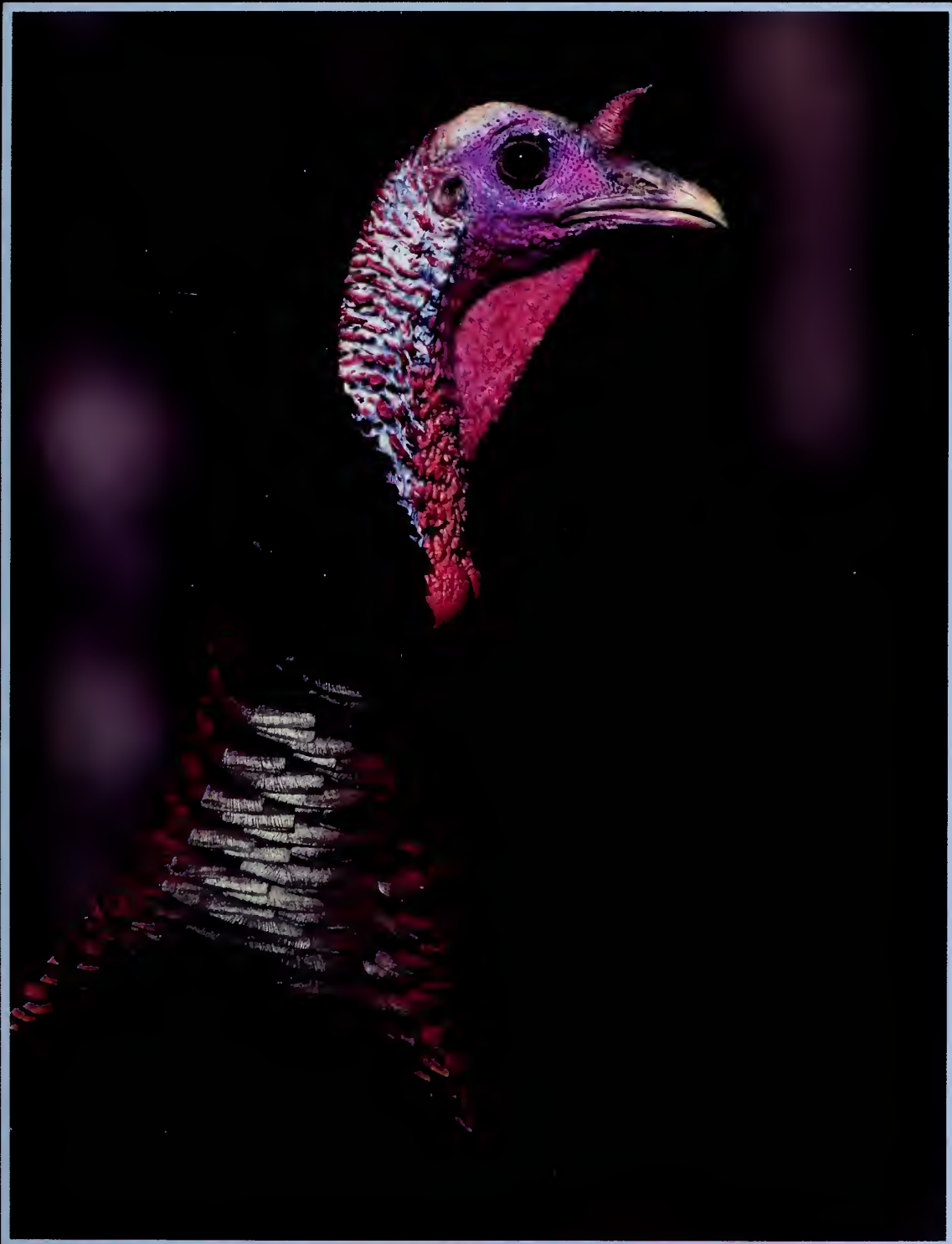


VIRGINIA WILDLIFE

APRIL 1990

ONE DOLLAR



Editor's page

I like turkey hunters. Every *serious* turkey hunter I've come across has been someone I've had to watch my step around. Very quietly they'll wait to call your bluff, trip you up, or watch you spill the beans about something you meant to keep to yourself. Then they'll laugh about it and make you mad. A turkey hunter would make a good poker player. They don't consider it sporting to lose.

If I wasn't so dim-witted, I wouldn't fall for their traps every time. I'd realize that every hunter worth the gun he or she carries into the woods, treats people like they treat their quarry—which means they take the time to understand them. All of them have learned the patience it takes to figure an animal out, a skill I find exceedingly rare in this world of 3-minute phone calls and 30-minute lunch breaks.

I was talking with a friend recently about the empty minds you can oh-so-easily encounter in any aerobics class or weight room these days. "Think about it," said my friend. "Have you ever thought how mindless, how easy it is to ride a stationary bike for 30 minutes? There's no skill required, no thinking involved." It's easy and it keeps you fit, kind of like eating oat bran every morning.

You take the sport of *hunting*, on the other hand, and you're talking

mental trauma. You can't hunt if you can't think, contrary to what much of the anti-hunting establishment believes. I know. I've been tripped up before in the woods when I was caught lapsing into mindlessness. Too much stationary bike riding and oat bran does that to you.

Nevertheless, it's a fact. Hunting doesn't pay off for the impatient, the unskilled, the bozos of this world. Oh, everyone lucks out once in awhile, but the ones who stick out hunting every day of every season, have learned things that have left us weekend nature lovers, dayhikers, and TV addicts behind.

First of all, they don't take anything for granted. It's just not in their nature. They've learned the hard way that the moment you become complacent about anybody or anything, you lose your advantage. And for a turkey hunter not to be in control of a situation—well, you might as well go back to bed and leave the woods to someone who knows what they're doing.

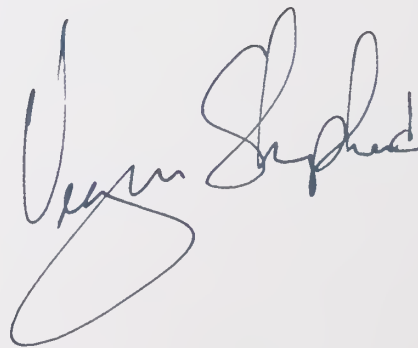
They've also learned that anything worth spending their time and energy on is worth doing right. They will tell you there's never been a turkey you couldn't call in if you just settle in for the duration and work that bird day after day and not lose your patience or your temper or both. And they've

learned that if you're going to do something right, it's going to take time, and you can't just squeeze it in between a workout and the grocery store and dinner and then call it "quality time" or a "worthwhile" project.

Furthermore, turkey hunters *never* waste time fooling themselves. It's not productive, since it holds up the business of *them* fooling turkeys. Besides, they have more sense than to get themselves into situations involving more than one fool at a time. And they've learned that understanding anything, whether it be a gobbler with a 12-inch beard or a friend they've known for years, is *never* done in a hurry.

I don't believe that turkey hunters have a corner on the market on how to live a good life. I just think they've carved out a way to live that most of us don't have the time for. Most of us would rather jam-pack our lives full of lots of forgettable experiences that can be wedged into an inflexible schedule rather than devote our lives to a few things that take a lot of time and freedom to perfect.

Either way works, I suppose. Still, I think I'll stick with the turkey hunters. There's something to be said for associating with people you think are smarter than you are.



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Wild turkey gobbler (*Meleagris gallopavo*), photo by Brad Herndon. Back cover: Canada goose (*Branta canadensis*), photo by Roy E. Lowe.

Special Lakes Fishing Guide:

You'll find the 1990 Lakes Fishing Guide as a special insert in this issue, full of where-to-go and what-you'll-catch details to get your season started off right.

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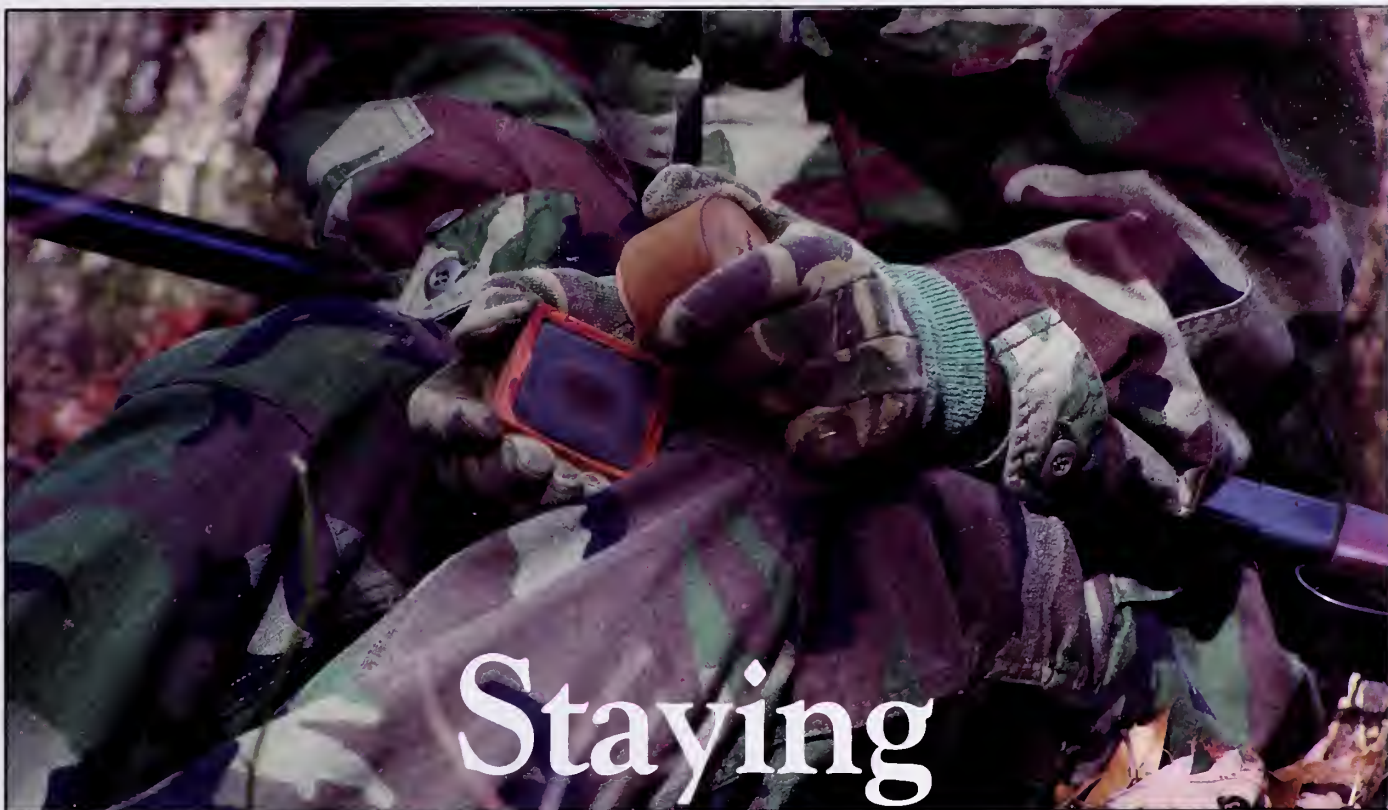
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Maslowski photo



Staying Alive

photo by Brad Hemdon

(or how not to become a turkey
hunting statistic this year)

Since the beginning of 1989, the only hunting fatalities recorded in Virginia were the result of hunters being tragically mistaken for game during the fall and spring turkey seasons.

Because of the popularity of turkey hunting and the increased numbers of wild turkeys in Virginia, you never can count on being in the woods alone—and that's when the trouble starts. Because most turkey hunters wear full camouflage while hunting turkeys, and the central technique of the sport requires absolute stillness while imitating turkey calls to bring the game into shooting

range, hunters may easily be mistaken for game. Add to that the increased cover present in our late spring woods and the number of Saturday hunters taking in the last of the season, and the risk of injury becomes a serious concern.

What can you do to safeguard yourself this season? Well, it's no secret that most turkey hunters disdain the use of blaze orange, but it's also a fact that you need to display something to alert other hunters to the presence of a human—not a turkey, if you're concerned about your own safety. Experts recommend tying a blaze orange sash from 6-10 inches

wide, visible in all directions, above your calling position. Yes, turkeys can see colors, but if a sash is tied on a tree several feet above you, observations and experience has shown that a turkey will not be spooked. After all, the turkey will spy an unalarming sash on a tree, not *you* camouflaged under the tree. Plus, studies have shown that most hunters mistaking a human for game do so because there is nothing about the situation that jolts them out of thinking that what they see isn't game. Thus, you need something that can only be human (who ever saw a turkey wearing blaze orange?) to alert other hunters that

what is near is a man or woman—not a turkey.

There are other safety precautions that you should take while turkey hunting to protect yourself—and others. We've numbered them below:

1. Always identify your target. Never shoot at a sound or movement. This would seem the most obvious of precautions, but believe it or not, most hunting fatalities occur as the result of a hunter not being sure of his target or simply shooting at sound or movement. Remember: Once you pull the trigger, it's too late to call you shot back.

2. Protect your backside. If possible, choose a calling position which provides you with a backstop as wide as your shoulders and protection from the top of your head down. This ensures that any shot from behind will not injure you. Also, position yourself so that you can see 180 degrees in front of you. A large tree is probably your best choice. A small tree will not hide slight movements of your hands or shoulders, and these movements may cause

other hunters to think you are a turkey.

3. Avoid wearing, red, white, or blue. Turkey hunters look for the red of a gobbler's head to distinguish it from the slate blue head of a hen. The top of the gobbler's head is white.

4. Avoid unnecessary movement. Never move, wave or make turkey sounds to alert another hunter to your presence. Quick movements may draw fire. If you want to alert another hunter, yell in a loud voice and remain hidden.

5. Never stalk a turkey; you may be the one who ends up being stalked because of your movement.

6. Handle your firearm with care. Turkey hunting requires considerable walking and you often find yourself hurrying into a calling position. Check your safety often. Make sure you observe safe firearm handling practices at all times (see "Handle With Care," *Virginia Wildlife*, December 1989 for safe firearm handling tips).

7. Take a safe calling position. When hunting with a partner, always

set up in a shoulder-to-shoulder or back-to-back position. Never set up facing each other.

8. Don't use buckshot. In case of an accident, buckshot is much more lethal than smaller shot loads. Expert turkey hunters agree that the best shot sizes to use are 4's, 5's, or 6's, depending on how your gun patterns. You *must* pattern your gun to determine the best shot for your gun. Do not shoot beyond 35 yards, and always try for a head shot. Some experts also recommend copper-plated loads because of their ability to hold a tight pattern.

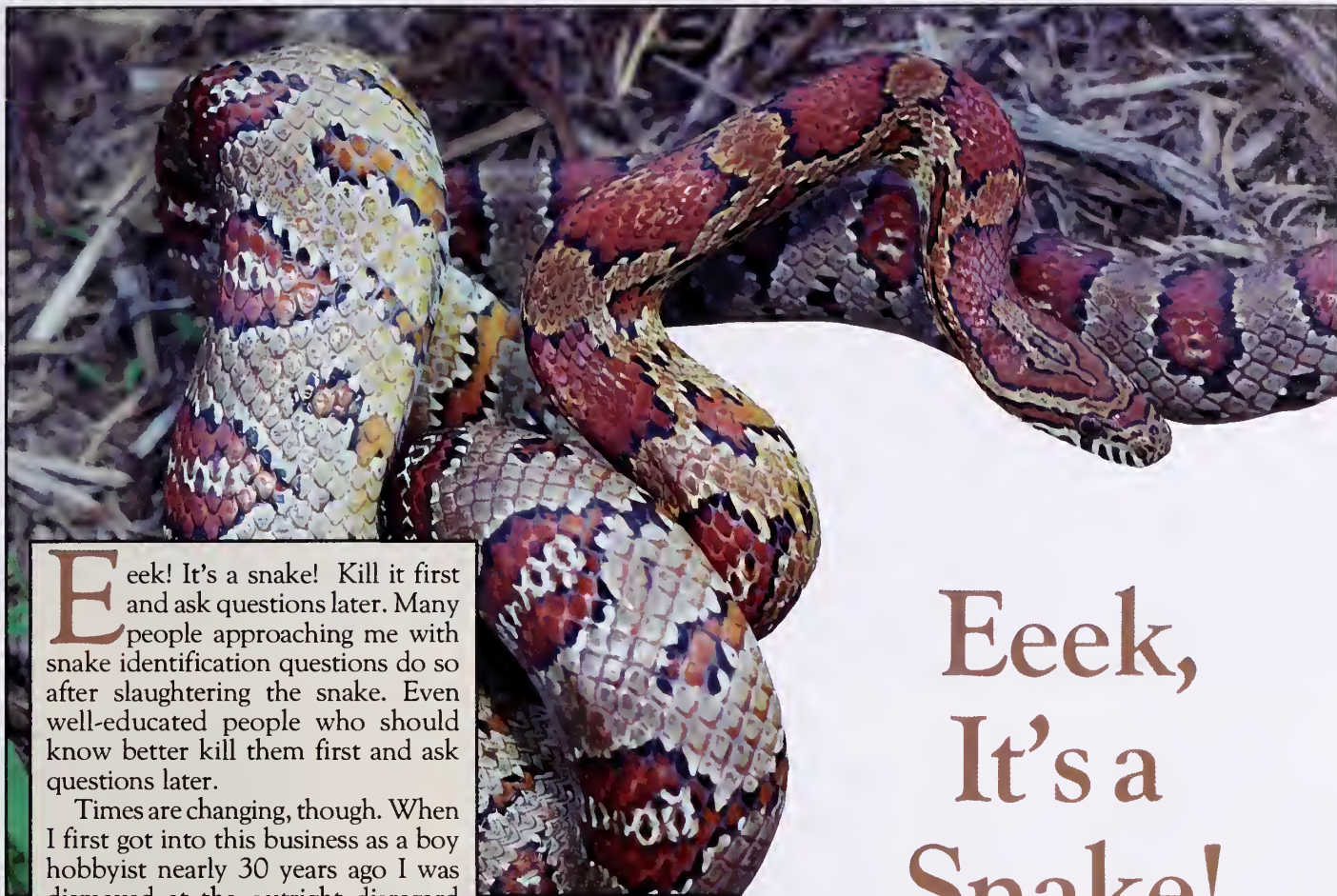
9. Carry your turkey home in a blaze orange sash or in a game pouch. Don't strap it to your belt—it might turn you into a moving target. If you use turkey decoys, follow the same procedure.

10. Be particularly careful when using a gobbler call. The sound and motion might attract other hunters.

Memorize these rules and use them. They may save your life—and someone else's. □



It is especially important to practice good safety procedures while turkey hunting in the spring since the hunter actually imitates the call of a hen in order to bring gobblers into range; photo by Brad Herndon.



EEEK! It's a snake! Kill it first and ask questions later. Many people approaching me with snake identification questions do so after slaughtering the snake. Even well-educated people who should know better kill them first and ask questions later.

Times are changing, though. When I first got into this business as a boy hobbyist nearly 30 years ago I was dismayed at the outright disregard for most nongame animals. All snakes provoked the "only good snake is a dead snake" attitude. But, today, although some people still harbor the "kill it" attitude, many others have a respect for all wild animals, including snakes, and a concern for their conservation.

A fear of venomous snakes, combined with a dose of respect, is healthy. However, the widespread lack of knowledge of how to tell a venomous snake from a nonvenomous one causes the unnecessary death of many individual snakes each year. Snake populations have declined over the last several decades. Killing of individuals, death by motor vehicles, collection for commercial profit, and most notably, loss of natural habitat have caused dramatic declines. The hard times snakes have fallen on are indicative of the plight of much of our native wildlife. Can this trend be stopped or reversed? An educated and concerned public offers the only hope. A desire to learn basic snake

*Corn snake (Elaphe guttata);
photo by Rob Simpson.*

Eeek, It's a Snake!

Take a closer look. The snake
you instinctively think is a
threat to life and limb is more
likely a startled and
nonpoisonous reptile.

by Joe Mitchell

identification is a first step in doing your part for nongame conservation.

But how does one go about learning how to tell the venomous species from the nonvenomous ones? Which ones are likely to be encountered in Virginia? I usually answer by listing the species and describing the heat-sensing pit located between the eye and nostril and the elliptically-shaped pupil in the eye of the pit vipers. Harmless species lack these features. Most people just laugh and say emphatically that they'll never get close enough to a snake to see those characteristics.

So, we are still left with the problem of how to identify a common snake from say, 10 feet away. Learning how to properly identify snakes takes time and work, just like anything else. Study available photographs and learn their patterns before venturing into the woods and fields.

Of all the snakes in Virginia, the copperhead, *Agkistrodon contortrix*, is the only venomous species found in every county. Its counterpart, the eastern cottonmouth, *Agkistrodon piscivorus*, is restricted in the Commonwealth to the swamps and backwaters of the southeastern corner and several isolated populations in the Surry County, Hopewell, and Newport News areas. The timber rattlesnake, *Crotalus horridus*, is limited to upper elevations in western Virginia and its subspecies, the endangered canebrake, *C. h. atricaudatus*, occurs only in several isolated populations in the remaining hardwood forests of Chesapeake,



Above: Eastern cottonmouth (juvenile); photo by Rob Simpson. Left: Eastern cottonmouth; photo by Joe Mitchell.



photo by Joe Mitchell



photo by Rob Simpson

Above and right: Northern watersnakes (*Nerodia sipedon*) are often fatally mistaken for cottonmouths (*Agkistrodon piscivorus*). Note that a cottonmouth has a much sharper

distinction between the top and sides of its snout than the more rounded snout of the nonpoisonous watersnake. Also, watersnakes swim with their heads out of the water and their bodies beneath the surface, unlike cottonmouths which ride high upon the water.



Timber rattlesnake (*Crotalus horridus*); staff photo.

Virginia Beach, and perhaps Newport News. Most people can identify a rattlesnake by the presence of rattles. However, rattlesnakes are seldom encountered by most people.

I recognize the cottonmouth by the stout, yellowish-olive body with wide black crossbands along its entire length and a chunky head with a sharp distinction between the top and sides of the snout. Some individuals appear entirely black, so body shape becomes the important feature to look for. Cottonmouths ride high in the water; the entire body rests on the surface. When encountered on the ground in the open, a cottonmouth will often throw back its head and open its mouth to expose the white interior. This is a defensive posture. It will strike only if provoked. Other snakes will simply flee.

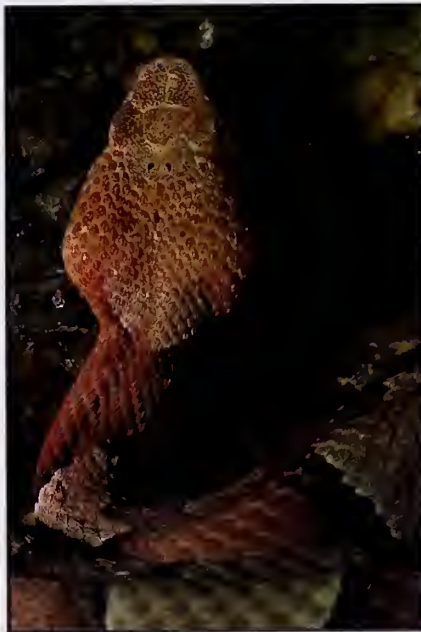
A nonvenomous northern watersnake, *Nerodia sipedon*, the species most people throughout the state mistake for a cottonmouth, swims with its head out of the water and the back of its body at or below the surface. Northern watersnakes are brownish

with dark crossbands on the forepart of the body that change at midbody to alternating blotches on the back and sides. They usually have numerous black or red half moon markings on the belly, whereas the cottonmouth is completely patternless there. The head of a northern watersnake is chunky but the top and sides of the snout are rounded.

Many of the 30 species of Virginia snakes are mistaken for copperheads. It's wrong to think that any snake with a pattern on its back is a copperhead, but lots of people do. The copperhead has a very distinctive pattern of a series of chestnut-brown, hourglass-shaped crossbands along the back. The neck of the hourglass is positioned on the middle of the back and the wide portions are draped over the sides. Some of the bands may be broken at the midline. No other Virginia snake has a pattern like this. Copperheads may be tan to reddish brown in background color and some, especially



Copperhead (juvenile); photo by Joe Mitchell.



Copperhead; photo by Rob Simpson.

Many of the 30 species of snakes in Virginia are mistaken for copperheads (*Agkistrodon contortrix*). However, the copperhead has a distinctive pattern of a series of chestnut-brown, hourglass-shaped crossbands along its back, and a sharp-angled head. Also, like the juvenile cottonmouth, all baby copperheads have a bright yellow tail tip, which is used to lure insects and lizard prey into range.

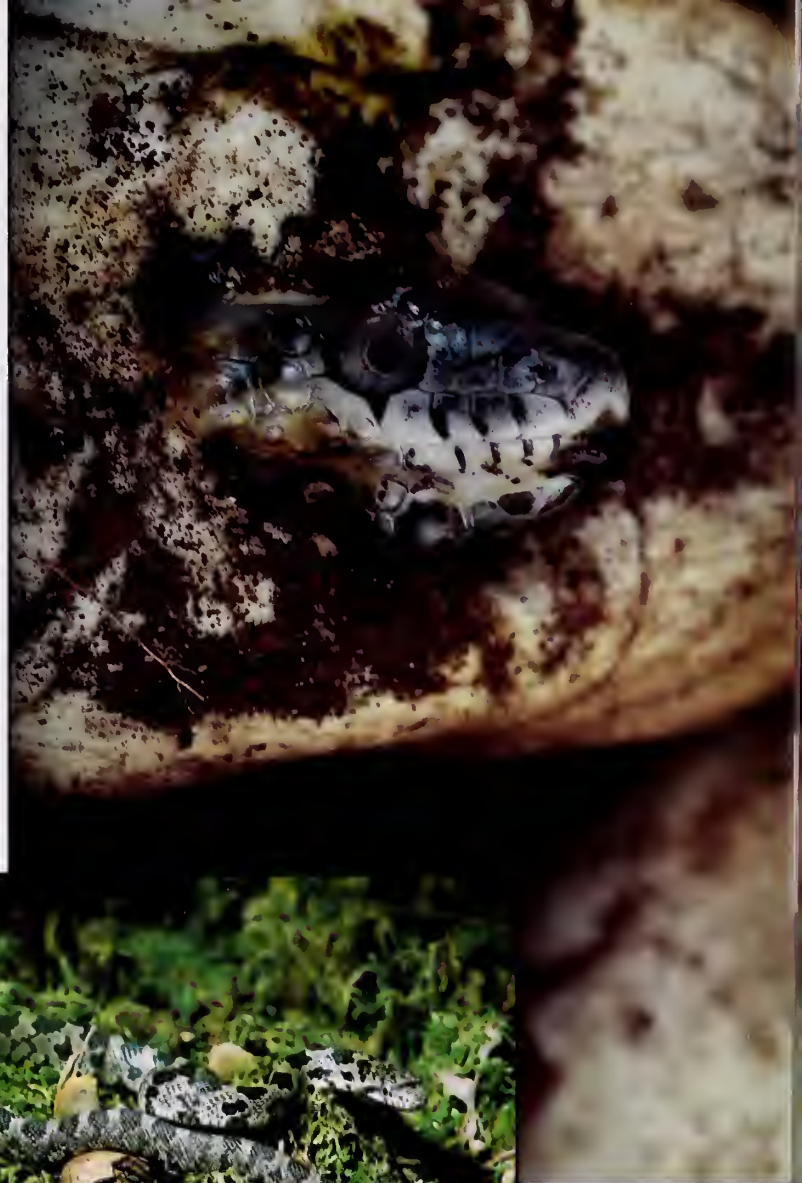
those from mountainous regions, may have lots of black specks causing the snake to appear very dark. However, the crossbands are always darker than the rest of the body. Geographic variation in body color allows for effective background matching in the open forests and fields across the state. Body shape is also important. Copperheads, indeed all members of the genus *Agkistrodon*, are stout to chunky snakes. The top and sides of the snout of most are usually flat, forming a sharp angle where they meet. Nonvenomous snakes have rounded snouts.

Baby copperheads possess all the adult features plus a bright yellow tail tip. The tail is used to lure insects and lizard prey while the snake remains cryptic in the leaves.

What should you do if you do encounter a venomous snake? There is truth in the saying that the only dangerous venomous snake is the one you don't see. Bites occur more often when one is stepped on in a brush pile or when you reach under something lying on the ground before looking. Bites also occur when trying to kill one. If bitten, then a quick trip to a hospital is in order. Snakes seen in the open can be avoided. None of



Above: Black rat snake; photo by Lynda Richardson. Right: Black rat snake hatchling; photo by Lynda Richardson. Below: Black rat snake (juvenile); photo by Rob Simpson.



Young black rat snakes (*Elaphe obsoleta*) are often mistaken for copperheads because of their patterned juvenile coloration. Found throughout the state, they reach seven feet in length, and the adults are uniformly black except for a white chin and lower neck.

the venomous snakes move fast and are easily outrun. If the snake is around your house, have it removed and taken to a remote area. Don't kill it for any reason. The copperhead is the only commonly encountered venomous snake in Virginia and no one in recent Virginia history has died from its bite.

Other commonly encountered Virginia snakes include nonvenomous black snakes, hognosed snakes, garter snakes, northern water snakes, and several secretive species generally less than 18 inches long.

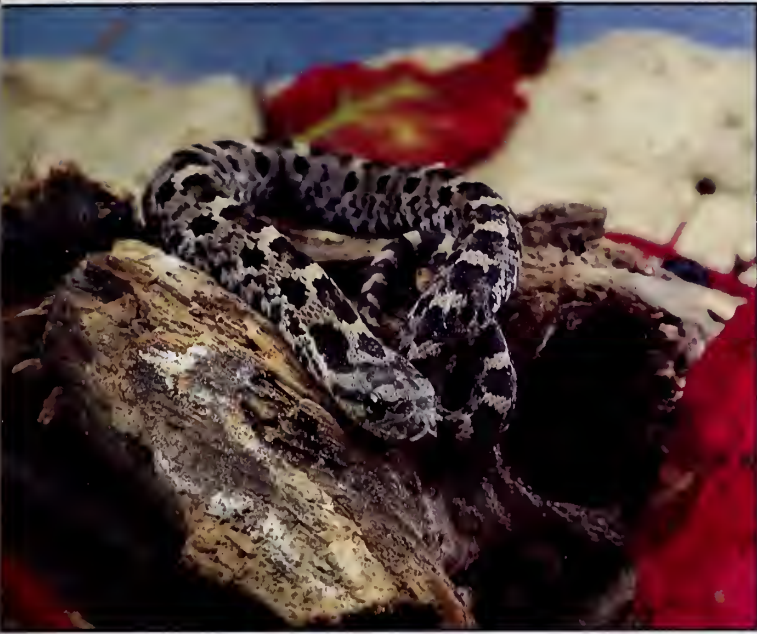
Two species of black snakes occur in Virginia and both have babies that look nothing like the adults. These youngsters are often killed because they are mistakenly identified as copperheads. The black rat snake, *Elaphe obsoleta*, inhabits forest and woods across the Commonwealth and reaches seven feet in total length. Babies and juveniles up to about one year or so in age are cream in color with a series of dark brown blotches on their back. They also have a dark stripe through the eye. Adults are uniformly black except for a white chin and lower neck. The black racer, *Coluber constrictor*, is found in grassy fields and open areas in woods and reaches about five feet in length. Its babies are gray in color with a larger series of smaller dark blotches down the back. Adults are black with a

white chin. Eggs of both species hatch in late-August to about October.

The hognosed snake, *Heterodon platyrhinos*, is a much maligned member of our herpetofauna. "Spread-head moccasin" and "blow viper" are other names used by Virginians for this snake. Its behavior of spreading its neck, hissing, and striking with mouth closed often gets it killed by humans. Yet, these acts and the advanced stages of rolling over and playing dead serve as protection against predators. Not all will eat a seemingly dead snake.

Equally as fascinating is the hognosed snake's ability to eat toads, its main prey. Enlarged teeth in the rear of the mouth puncture the inflated toad during swallowing and special enzymes break down the toxins in the toad's glands. Sandy areas good for burrowing are where toads and hognosed snakes are found. The up-turned snout allows the snake to root around in such soil in search of meals.

Hognosed snakes are not usually difficult to identify because of their behavior. But this species comes in two color phases, variously blotched



Eastern hognosed snake (juvenile); photo by Rob Simpson.



The showy, bullying antics of the Eastern hognosed snake (*Heterodon platyrhinos*) often bring on its death from people not recognizing the harmless hissing, striking and neck flattening behavior of this animal. If it doesn't act up, its upturned snout on a robust body gives its identity away; photo by Rob Simpson.



photo by Joe Mitchell

Right: The black racer (*Coluber constrictor*), like its cousin the black rat snake, often loses young (above) to humans mistaking them for copperheads. Note that the adult black racer lacks the white lower neck of the black rat snake but shares the white chin.



photo by Rob Simpson

and all black. When the snake does not perform, (like when it's cold) look for the upturned snout on a robust body.

I am still scratching my head over the "garden" snake. As far as I know there are no snakes in Virginia or anywhere else that are found primarily in people's gardens. I think these folks mean the nonvenomous garter snake, *Thamnophis sirtalis*. It's a common species found statewide in a variety of habitats, from intermittent wetlands and hardwood forests to grassy balds and wildlife management fields in the mountains. It is found in some urban areas. Garter snakes, most of which are well under four feet in length, have a yellow stripe down the middle of the back and in most populations one on either side. Its basic color is olive to brown and a series of alternating black spots lies between the stripes. The belly, neck, and mouth are yellowish-green.

Garter snakes bear living young and as many as 57 babies are born around September. These snakes, like baby black snakes, are sometimes found in basements.

The snakes we've been describing are usually encountered out in the open, although it is possible to find them under boards, small boats,

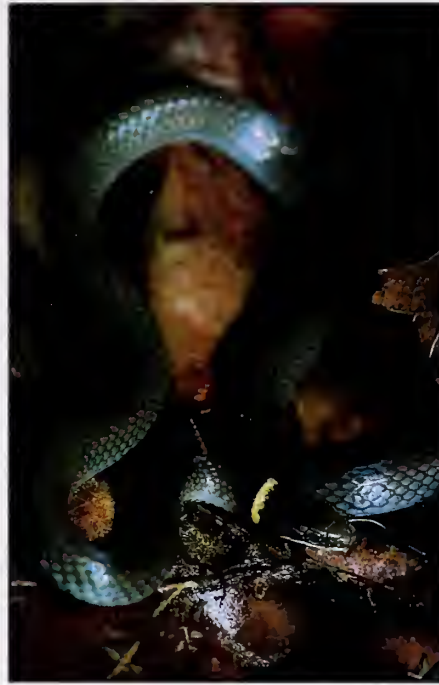


Northern brown snake; photo by Rob Simpson.



Eastern garter snake; photo by Rob Simpson.

The nonvenomous garter snake (*Thamnophis sirtalis*) sometimes frequents urban areas and the babies (sometimes as many as 57 live young) born around September are sometimes discovered in basements. Secretive by nature, the rest of the species pictured above aren't usually encountered in the open. Hiding instead under rocks, boards, logs, small boats and the like, they feed on prey that also frequent those areas, like lizards, salamanders, and earthworms.



Northern ringneck snake; photo by Rob Simpson.



Smooth earth snake; photo by Joe Mitchell.

pieces of tin, and the like. Several species of snakes in Virginia, however, are seldom seen until they are discovered under something. Flower pots, piles of grass in the garden, the compost pile, and untended debris in the yard can harbor one or more small snakes. My wife, kids, and the cat have found several species of small, secretive snakes in our Henrico County garden and in the strip of woods adjacent to the house.

Ringnecked snakes, *Diadophis punctatus*, are uniform gray as adults and

gray to black as babies. All ages possess a single, bright yellow collar around the neck that may or may not meet in the center. They eat salamanders, small lizards, and worms and are egg layers. The northern brown snake, *Storeria dekayi*, and the smooth earth snake, *Virginia valeriae*, bear living young. Northern brown snake babies are black with a cream-colored collar around their necks but the adults are brown with two parallel rows of small black dots down the back. Smooth earth snake babies are uniformly colored gray like their parents. Both species are earthworm predators.

The 30 species that have adapted to the climate and diversity of habitats in Virginia are the same species that were here when Captain John Smith landed in 1607. They are the same species that played important roles in the everyday lives of Virginians since that time. They are the same species that have been killed by Virginians ever since. They are part of our natural and cultural history in the very same way as are all our other wildlife. Thus, they are as much a part of our heritage as is the culture we see in Colonial Williamsburg.

Why do some people continue to decimate our heritage? In my view, it's a combination of historically linked attitudes toward wildlife and a lack of education about the real and aesthetic values they possess. And yes, this even pertains to venomous snakes. Education is the important factor in insuring that our grandchildren's grandchildren will live to see the same wildlife that our ancestors saw. Killing snakes first and asking questions later only serves to hasten the decline of our nongame populations. Ask questions first, not after. Then perhaps you can appreciate and even be fascinated by the most mistreated of our native wildlife. □

Joseph Mitchell is the principle researcher on a statewide reptile and amphibian survey funded by the Game Department's Nongame Program.

Tasty Fish Guaranteed

Frozen fish that turn into smelly mush dinners are a thing of the past. Joan Cone reveals the key to good fish eating: the proper care of your catch.

by Joan Cone
photos by Roy Edwards

Sometime ago (in 1653 to be exact), Izaak Walton began a recipe by suggesting, "First, catch your trout." The subsequent passage of 337 years has not changed this sound advice. If you want to eat good, fresh fish, the best way is to catch your own. While "catch and release" is always in style, there is no reason why you and your family cannot enjoy a few delicious meals based on the results of your angling prowess.

Good dining begins when you land your future dinner. Dragging dead fish around all day in warm water on a stringer will not improve their flavor. Dead or alive, they tend to become soft and waterlogged. If dead, they will begin to spoil. If you can keep your catch alive in a live-well, so much the better. Otherwise, place your fish on ice as quickly as possible. Bring along a cooler or carry one in your car or truck. If you are wading for trout, the old fashioned wicker creel will help keep your brookies, browns, and rainbows cool by air circulation. In addition, you will probably catch these cold water species when the weather is reasonably cool in spring and autumn. Trout have another advantage. They do not need skinning or scaling. That's because they live in waters where they are not exposed to lots of rotting vegetation, muck and algae. Sure, there may be slippery algae on the rocks, but it is not clouding up the water.

As for all catfish and most bass, bream (sunfish) and perch, they are



Joan Cone demonstrates proper care of fish.

much better tasting when skinned before cooking. Pike and pickerel have very thin skin and do not seem to absorb as much muddy flavor.

It is not much fun to come home dog-tired from a day on the water and face the necessity of cleaning your catch. Instead, you can relax over a cool drink and superchill your fish until the next day or even longer. Super-chilling, based on the chemistry of an old-time ice cream freezer, requires only a good cooler, plenty of ice cubes or crushed ice and salt. Either table salt or rock salt will do a good job. You will need about a cup of salt for every 20 pounds of ice. Why the salt? It helps ice melt at a higher temperature. This may sound ridiculous, but when ice melts, it absorbs energy in the form of heat, and this cools down your ice/salt mixture.

Begin by lining the bottom of your ice chest with three or four inches of

crushed ice or ice cubes. Next, add salt and mix it thoroughly with the ice. At that point, you are ready to add a layer of fish or fillets placed in watertight, plastic freezer bags. Keep on alternating layers of ice with salt and bags of fish. Why put fish in a plastic bag? It is to stop them from soaking up salt or water or both. When all your fish are in the cooler, top it off with a generous layer of ice and close the lid securely. If you are traveling, drain excess water from the bottom of your cooler at least once a day and add ice on the top. Using this system, I recently kept fillets for a week while returning from the Gulf of Mexico, and they were perfect when we arrived home. They tasted as if we had just caught them.

If possible, it is always a good idea to clean your catch before super-chilling. It is not necessary, but it never hurts to clean fish as soon as possible.

Visiting in England, we found that relatives were not keen on eating trout. They said they tasted muddy. When we served our trout, they still did not seem enthused, yet wound up cleaning their plates. That's when we discovered that many proper British anglers come home, toss their trout on the kitchen table, pour a drink and forget about cleaning fish until the following day. I suppose the icy British climate and lack of central heating prevents ptomaine poisoning. On the other hand, this lack of ice and cleaning spoils the flavor.

So, don't let fish lie around without ice and remember that with most

Virginia species, it will pay to skin them first. As already mentioned, the strong flavor found in bass and other warm water species comes from the skin.

It is one thing to say, "Skin your fish." Doing it is something else again. While any long-bladed, thin and sharp knife will do the job, an electric carving knife is best. Use it and you will have perfect fillets and no scraps of fish left attached to the skin. Here's how:

1. Place your fish on a cutting board. Grasp the fish's mouth with your first two fingers and thumb and run your blade down behind the gills until it reaches the backbone.

2. Then turn your blade so it runs parallel along the backbone. Work right through the ribs, staying close to the spine. Continue cutting to a point about three quarters of an inch from the tail fin.

3. Stopping at the tail, flip the sliced fillet over with skin against your cutting board and run the blade forward at a slight downward slant until your fillet is separated from the skin. You can easily remove the ribs from the filleted portion with your electric carving knife. After doing one side, turn the fish over and repeat the process.

With small fish, such as bluegills and little crappie, it is best to leave the ribs on the carcass. You will have a smaller fillet, but it will be boneless, and the amount of meat atop the ribs on these little fish isn't worth keeping.

Remember, fish should never be soaked in water. Just rinse your cleaned fish or fillets to remove remaining blood. Soaked fish absorb water which forms destructive ice crystals upon freezing. It literally turns good flaky fish into mush.

If you are going to eat your catch fairly soon, you can keep it fresh by simply freezing in an airtight, heavy wrapping to avoid freezer burn. Old bread bags and pieces of waxed paper do not do a good job of protecting fish from freezer burn. Neither does aluminum foil. Both become brittle and develop holes which let in air. You might not think such a little amount of air would make a difference, but it does. It's the oxygen in this tiny amount of air which causes freezer burn.

To freeze fish so they will keep for six months or even longer, the ideal way is to use a protective dip before wrapping. Here is one developed and tested by North Carolina State University.

1 envelope (1 tablespoon) unflavored gelatin

1/4 cup fresh or reconstituted lemon juice

1 3/4 cups water

Stir gelatin into your cold water-lemon juice mixture. Place over low heat on the stove, stirring constantly, until all gelatin is dissolved. Let cool to room temperature. Then dip each individual fish or fillet into this liquid and shake off any excess. Wrap your fish or fillets in a heavy duty plastic

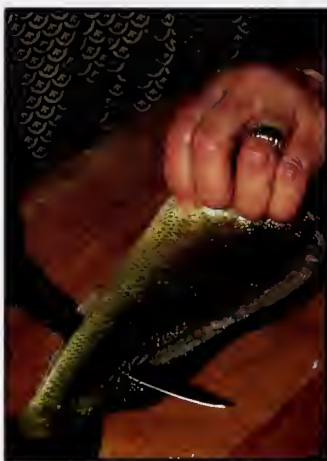
freezer wrap. Place these packages in a heavy-duty plastic freezer bag or wrap twice in freezer paper, sealing each seam with 2-inch wide masking tape. Mark date and weight plus contents on wrapper or tape with a waterproof marker. Consider that the best size packages are those which represent a meal of fish for your family.

Why bother with a protective glaze? The answer is that gelatin forms an airtight seal. It also holds the lemon juice, an antioxidant, in contact with your fish. Lemon juice prevents odors from developing and stops color change.

Yes, you can freeze fish in water. This is usually done with empty milk cartons or in heavy duty, airtight plastic bags. It works especially well with small fish, such as trout. With larger fish, your problems begin. First, you need a larger carton or bag. Then you find you are using a huge amount of freezer space. In addition, your fish may be absorbing water during the slow freezing process. It is true, commercial fish plants and even some ships freeze wet fish. However, they use flash freezers which are colder and faster than any home freezer.

Use the methods described above and you'll be ready to enjoy truly fresh, delicious fish months after you reel them in. □

Joan Cone has written several books on wild game and fish cooking. She lives in Williamsburg.

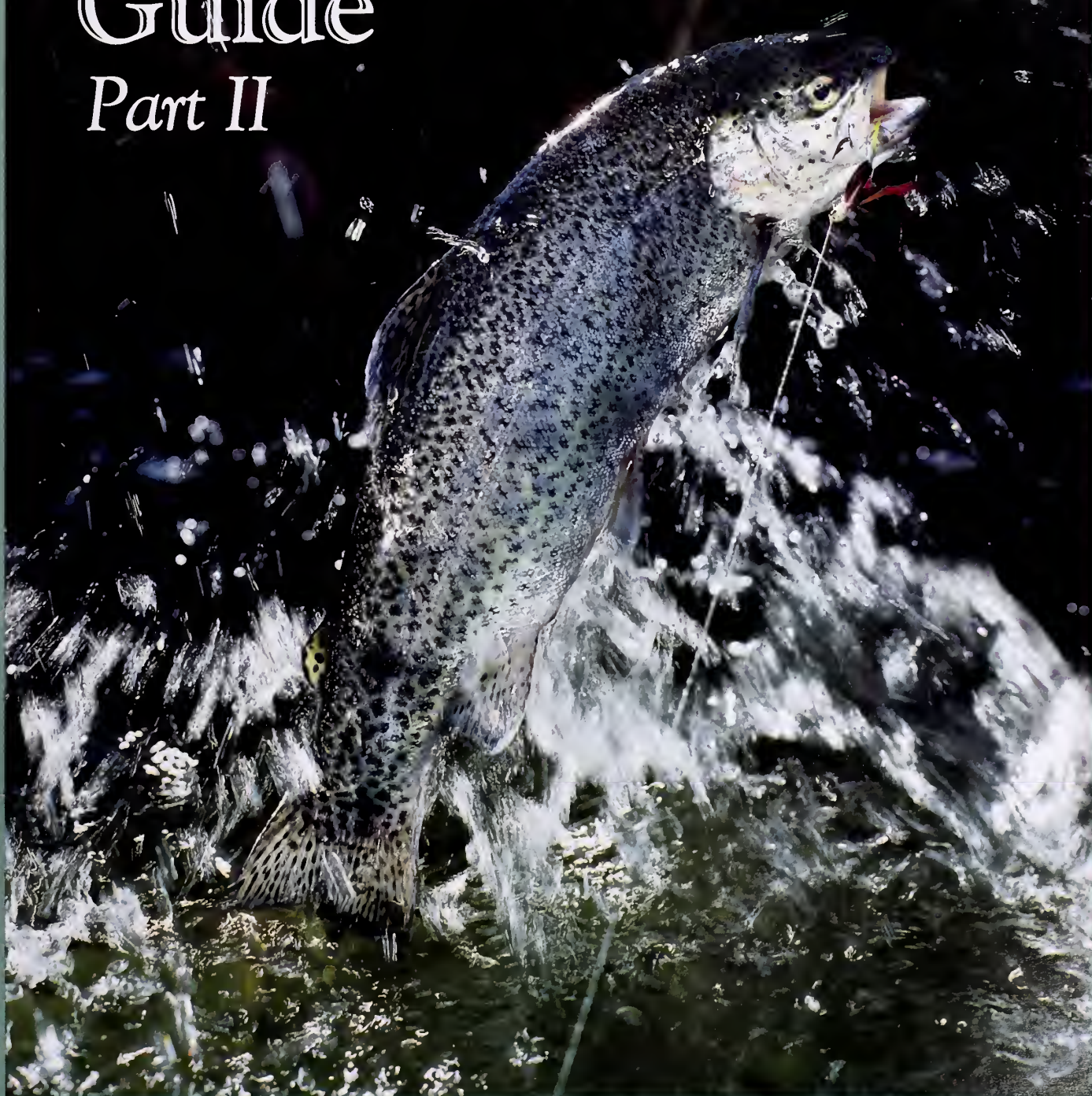


Joan Cone demonstrates steps 1-3; Fillet you fish properly, losing as little meat as possible. Step 4: Prepare a lemon juice/gelatin mixture to freeze your fish in, to maintain its freshness for six months or longer.

1990

Trout Fishing Guide

Part II



Rainbow trout; photo by Doug Stamm.

Department of Game and Inland Fisheries

We have devoted this guide almost exclusively to five maps illustrating the locations of the wild, stocked and special regulation trout streams in the state. However, for a closer look at the special regulation areas in the state, we have described these areas below.

Special regulation areas provide anglers with the opportunity to catch more and larger trout throughout the fishing season. Restrictions have been applied to certain wild trout waters as well as several types of stocked trout streams, and they include some of the state's best trout water. Check your fish law digest for the specific regulations applying to each area.

Special Regulation Wild Trout Streams

In the following streams, regulations require use of single hook artificial lures and all trout less than 9 inches in length be returned to the water unharmed. The exceptions are the Rapidan River and its tributaries (which require the use of single barbless hook artificial lures), Stewart's Creek, and North Fork Moorman's River, which require the release of all fish caught.

Conway River/Devils Ditch (Greene County)

Special regulations apply to that portion of Conway River and its major tributary, Devils Ditch, within the Rapidan Wildlife Management Area. The stream contains brook trout in the upper reaches with wild brown trout scattered through the lower portions. Adult brook trout range from 7-11 inches in length, brown trout occasionally exceed 20 inches. The stream lies north of Standardsville and can be reached by Route 615 from Graves Mill. The area adjoins the Shenandoah National Park.

Little Stony Creek (Giles County)

Special regulations apply to that portion of Little Stony Creek in the

Jefferson National Forest. Most of the special section is below the Cascades waterfall. The upper reaches of Little Stony Creek contain native brook trout, but rainbow trout comprise most of the trout population below the Cascades. Adult rainbows average 7-12 inches in length. The area is heavily used by hikers and picnickers. The stream is located near Pembroke and can be reached by Route 623.

Little Stony Creek (Shenandoah County)

Little Stony Creek is a small mountain brook trout stream. The special regulations apply to that portion of stream above Woodstock Reservoir. Adult brook trout presently average from 7-10 inches in length. The stream is located west of Woodstock and Forest Service Road 92 crosses the lower portion of the special regulation section. Much of the upper reaches can only be reached by foot trail.

North Creek (Botetourt County)

The upper section of the stream (above the first bridge upstream of the North Creek campground) is designated for special regulations while the lower portion remains put-n-take trout water. Rainbow trout predominate, although brook trout are present in the headwater tributaries. Adult trout will range from 7-12 inches. The stream is located east of Buchanan, a short distance from I-81. The Jefferson National Forest maintains a campground adjacent to the stream and vehicular access is available along most of its length.

Rapidan River (Madison County)

The Rapidan is our best known special regulation trout stream. Unlike the other streams in this category, the Rapidan is further restricted to barbless hook and fish-for-fun regulations. The special regulation area includes that portion of the stream within the Shenandoah National Park and the Rapidan Wildlife Management Area. The stream may be reached by Route 662 from Graves

Mill or Route 649 from Criglersville. A dirt road parallels most of the stream but the upper portion is gated. Native brook trout are the dominant species and adult trout range from 7-14 inches in length. Due to the special no creeling regulation, the Rapidan contains many 10-11 inch trout.

St. Mary's River (Augusta County)

The special regulation section includes all portions of the St. Mary's River above the gate at the National Forest boundary. It is fairly high gradient with a number of waterfalls. Although water levels can get quite low along lower reaches, flows are much improved upstream and large, deep pools provide ample trout cover. The St. Mary's River is one of a few streams in the state which contain wild populations of brook, brown and rainbow trout. Brook trout predominate in the lower and upper reaches with rainbow trout through middle sections. Brown trout, which sometimes exceed 20 inches, are scattered through the lower reaches. Adult brook trout and rainbow trout average 8-12 inches in length. The stream lies east of Raphine off of Route 608 a short distance from I-81. Most of the area is accessible by foot trail only and backpacking is popular.

Stewart's Creek (Carroll County)

Stewart's Creek is one of two catch-and-release trout fisheries in the state. It is a high-gradient native brook trout stream with numerous plunge pools, rock ledges, and a dense rhododendron canopy for cover. Around 4.5 miles of Stewart's Creek and its two major tributaries, North Fork and South Fork Stewart's Creek, were opened to the public in 1989 for year-round fishing. Only single hook, artificial lures can be used.

Stewart's Creek Wildlife Management Area is southeast of Galax on the North Carolina side of the Blue Ridge Parkway. Take exit 1 off I-77.

Follow the trailblazer signs to the area.

Whitetop Laurel/Green Cove Creek (Washington County)

The special regulation area includes the lower mile of Green Cove Creek plus Whitetop Laurel Creek from the mouth of Green Cove to the first bridge above the village of Taylors Valley. Whitetop Laurel is one of Virginia's largest and most beautiful wild trout streams. Wild rainbow trout dominate, with most adults in the 7-14-inch class. A few wild brown trout provide occasional trophy fish. The special regulation area is located east of Damascus near the Tennessee line and within the Mount Rogers Recreation Area.

Shenandoah National Park

The Park provides an entire region of special regulation trout streams extending from Front Royal to Waynesboro. Regulations require the use of single hook artificial lures only, and restrict daily creel limits to five fish all of which are eight inches or more. The season is open from the third Saturday in March through October 15th. Most streams within the Park contain good populations of native brook trout, but not all are open to fishing. Some isolated brown trout are also found in the lower reaches of the larger, east slope streams.

Special Regulation Stocked Trout Streams

In the following two streams, special regulations require the use of single hook artificial lures and restrict creel to fish over 12 inches in length. Trout from 8-10 inches are stocked periodically and allowed to grow for several months to a year before being creeled. This approach can be used in streams that maintain good flow, cool summer waters and are productive enough for good growth of trout.

Little River (Floyd County)

Special regulations apply to a 3-

mile stretch of stream beginning one mile above and extending two miles below Route 615. This section is located just north of the town of Floyd. Little River is a large, low gradient stream with good habitat. However, the special regulation area often gets too warm for trout during summer months, causing many fish to move upstream into smaller tributaries. Little River does provide good fishing during April, May and early June and is an excellent choice for fly fishermen.

Snake Creek (Carroll County)

Special regulations apply to all of Big Snake Creek below Hull Ford and all of Little Snake Creek below the junction of Routes 922 and 674. The stream is located just north of Fancy Gap. Snake Creek is a moderate gradient, softwater, gravel bottomed stream with an average width of about 18 feet. Holdover of stocked fish is good along with a fair population of native brook trout.

Special Regulation Trophy Trout Streams

Management of a few selected streams as trophy trout water is relatively new to Virginia. Regulations restrict fishing to the use of single hook artificial lures and the creel to 2 fish per day over 16 inches. Mossy Creek and Smith Creek, furthermore, are restricted to flyfishing only. The management approach is to stock fingerling trout (5-6") in high quality streams where they will grow exceptionally fast.

Smith Creek (Rockingham County)

The special sections includes approximately 1.5 miles of stream opened in 1989 near Lacy Spring. Smith Creek flows through private farmland and requires a written landowner permit to fish. Brown trout fingerlings are stocked annually in the fall. Good numbers of 10-16 inch

trout are available and fish over 4 pounds have been reported. In the flyfishing only stream, only two trout over 16 inches can be creeled daily, and year-round fishing is allowed.

Back Creek (Bath County)

The rugged mountains that form the backdrop to the Back Creek special regulation area featuring a trophy brown trout fishery is one of the area's most appealing features.

Brown trout fingerlings are stocked annually and the year-round fishery was opened to the public in 1989. Trout growth is outstanding, and angling is restricted to artificial lures with creeling limited to two 16-inch trout daily. A campground, picnic pavilion, outdoor games, and two warmwater lakes for fishing and swimming also can be enjoyed. Take Route 39 west of Warm Springs to Mountain Grove, right on Route 600 for 6 miles to the area.

Mossy Creek (Augusta County)

The special section includes about 4 miles of stream extending upstream from the Augusta/Rockingham County line. The stream is located just off of Route 42 south of Bridgewater. Fishing in Mossy Creek is restricted to flyfishing only and a written landowner permit must be obtained. Mossy Creek is a classic, meadow limestone stream averaging about 15 feet in width and flowing through open pastures. Brown and rainbow trout are both present and numerous fish in the 3 to 7-pound class are available to fishermen.

Smith River (Henry County)

The special area includes the posted section extending 3 miles downstream from Towne Creek near the town of Bassett. Smith River is Virginia's most noted trophy trout stream. The current state record, 18 pound 11 ounce brown trout was taken in 1979 and numerous trout exceeding 10 pounds have been caught. Smith River is a large, flat, tailwater stream receiving coldwater discharges from Philpott Dam.

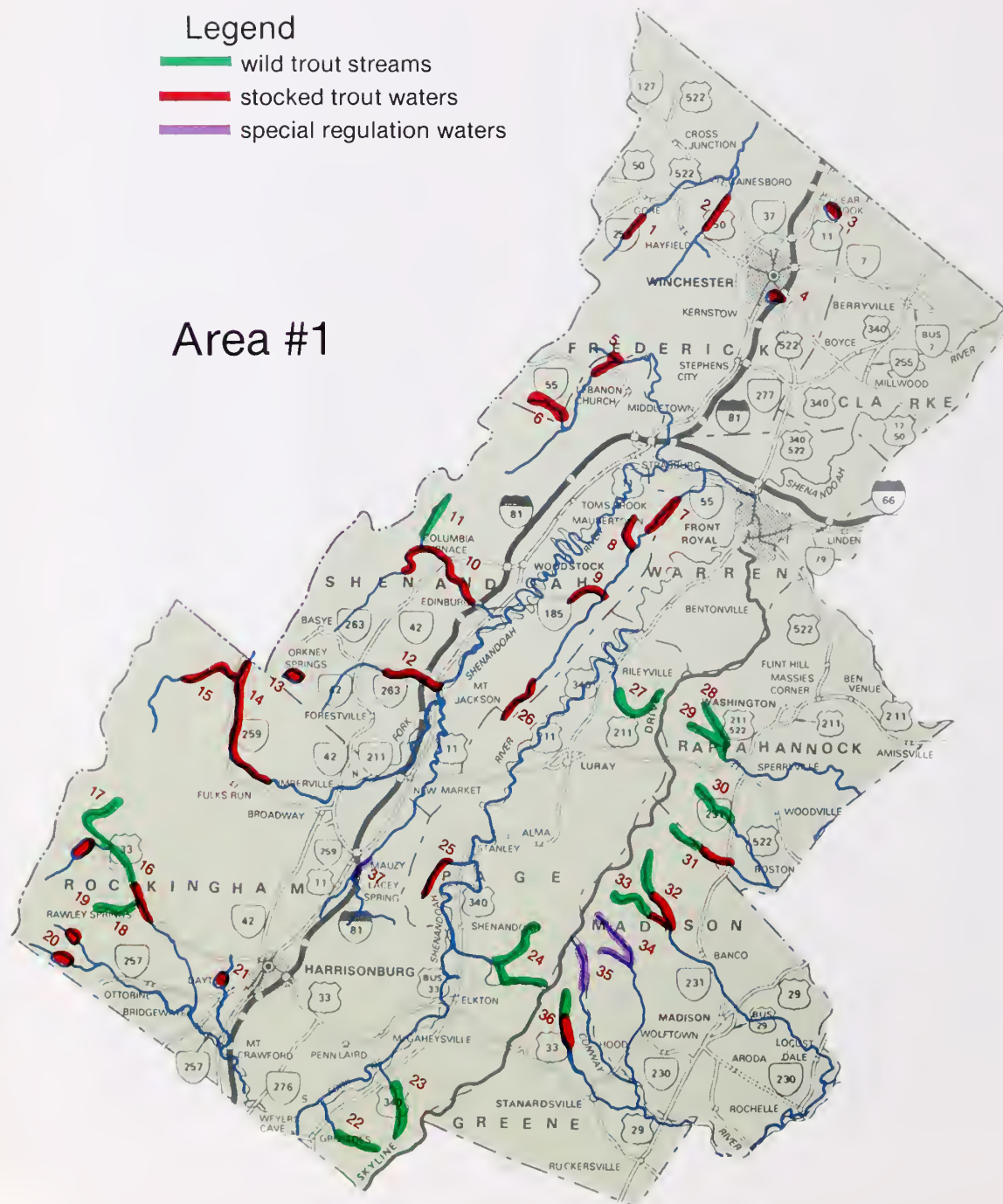
On the following pages we have separated the trout streams of the state into five area maps. Each trout stream is identified as wild, stocked or special regulation. We have given the **general** location of each stream, but it is essential to obtain a topographical or county map to pinpoint specific locations before you start your fishing trip.



Legend

- wild trout streams
- stocked trout waters
- special regulation waters

Area #1



Frederick County

- (1) Back Creek
- (2) Hogue Creek
- (3) Clearbrook Lake
- (4) Winchester Lakes
- (5) Cedar Creek
- (6) Paddy Run

Shenandoah County

- (7) Passage Creek
- (8) Little Passage Creek
- (9) Peters Mill Creek
- (10) Big Stony Creek
- (11) Little Stony Creek
- (12) Mill Creek
- (13) Tomahawk Pond

Rockingham County

- (14) N. Fk. Shenandoah River
- (15) German River
- (16) Dry River
- (17) Switzer Lake
- (18) Blacks Run
- (19) Hone Quarry Lake
- (20) Briery Branch lake
- (21) Silver Lake
- (22) Madison Run (SNP)
- (23) Big Run (SNP)
- (37) Smith Creek

Page County

- (24) Naked Creek (SNP)
- (25) Cub Run
- (26) Upper Passage Creek
- (27) Jeremys Run (SNP)

Rappahannock County

- (28) Piney River (SNP)
- (29) N. Fk. Thornton River (SNP)
- (30) Hazel River (SNP)

Madison County

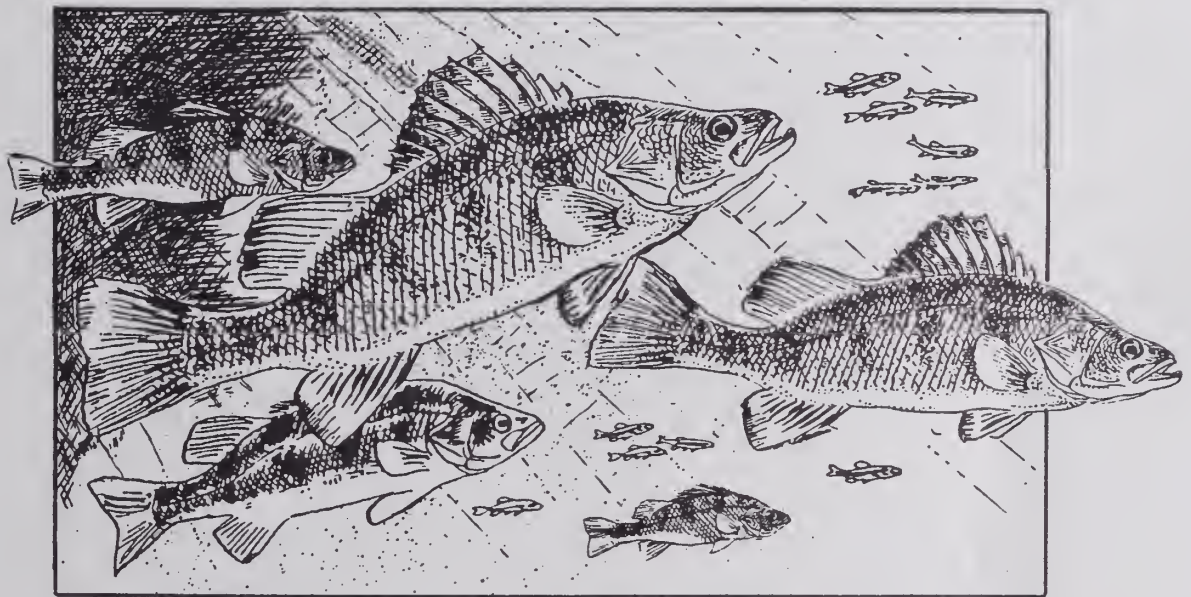
- (31) Hughes River (SNP)
- (32) Robinson River (SNP)
- (33) Rose River (SNP)
- (34) Rapidan River (SNP)

Greene County

- (35) Conway River
- (36) South River

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FISHING GUIDE



D. RAYE



Lake Moomaw (Alleghany/Bath County)

This 12-mile long, 2530-acre reservoir has more than 43 miles of shoreline.

Much of the shoreline is adjacent to the 13,428-acre Gathright Wildlife Management Area. The average depth of the lake is 80 feet and flow augmentation results in a normal five to 15 foot drawdown by late summer.

Fisheries biologist Larry Mohn says there is an equal complement of largemouth bass and smallmouth bass in the lake. There is a strong population of 13- to 15-inch largemouths for 1990 and largemouth up to five or six pounds are not unusual. Anglers checked in 18 citation smallmouths in 1989.

Fishing can be difficult due to extreme water clarity. Best opportunities are early in the year and night fishing in the shallows after dark in summer.

Mohn regards crappie fishing as outstanding with one to 1.5 pounders common. Moomaw produced 12 citation crappies in 1989.

Brown trout had been spectacular, but then suddenly dropped off due to low survival rates of the 1987-88 fall stockings. Stocked trout this year will be in the 12-15 inch range and by 1991, they should be three to five pounds. It takes about two years to reach this size. Moomaw tallied 126 citation browns in 1989. The biggest was a 10 lb. 5 oz. fish.

McConaughy strain rainbow trout are doing very well also. Most trout are caught by trolling with shad imitation crankbaits, some are caught

still fishing with live shad 25 feet down and others by jump fishing. Anglers took 70 citation rainbows out of Moomaw last year.

Catfish are good in Moomaw, with many in the 10-16 pound range. Moomaw produced the top rock bass in the state last year with a 2 lb. 2 oz fish. Overall, Moomaw yielded 233 citations of nine different species.

The area around Moomaw provides nearly year-round opportunities for outdoor activities, including camping.

For facilities information, contact the James River Ranger District in Covington (703) 962-2214; the Warm Springs Ranger District in Hot Springs (703) 839-2521; or the U.S. Army Corps of Engineers in Covington (703) 962-1138.

Lake Robertson (Rockbridge County)

Robertson is a 31-acre Department-owned lake on the A. Willis Robertson Recreational Area which is owned and operated by Rockbridge County.

Robertson has excellent largemouth bass populations, according to biologists Larry Mohn and Paul Bugas. It annually produces a few lunkers in the double digits. It is the best bluegill and redear lake in the western part of the state with many 8-inch plus bluegills and ½ to ¾-pound redears. Robertson turned up seven citation sunfish in 1989.

Walleyes have also been stocked and samples have shown excellent growth with many fish in the 1½ to 3 pound range. Channel catfish populations are only fair.

The area has complete recreational facilities including a boat ramp, lake trail, 50-unit campground, picnic shelters, swimming pool, softball diamond, and playgrounds. A concession rents boats, electric motors and accessories.

The lake is located nine miles west of Lexington. Take Route 251 to Route 770 then Route 652 near Collierstown. Fishing hours correspond with the park's hours. For information, contact the concession office at (703) 463-4164.

Bath County Recreation Ponds

These Virginia Power ponds of 27 and 45 acres have a lot of small bass in the 12-inch range. A 12-15 inch slot limit will hopefully improve their average size. The creel limit is two per day.

The ponds have excellent bluegills in the 8-9 inch range and good numbers of nice-sized channel catfish are present.

The entire 45-acre upper pond and the lower half of the lower 27-acre pond will be open to fishing from the bank. Boating is allowed on the bigger pond only and there is a ramp for private boats. Electric motors only are allowed and there is also a handicapped fishing pier.

The area provides camping, swimming, picnicking and volleyball. It is located on Route 600 north from Route 39 near Warm Springs.

Douthat Lake (Bath County)

Douthat Lake is located within Douthat State Park. This 60-acre lake is a fee-fishing lake that is stocked with rainbow trout twice a week. It's normally open through Labor Day and is stocked all summer if it isn't too hot.

The lake also has good largemouth bass fishing, fair sunfish and channel catfish and has become an excellent chain pickerel lake. In 1989, it produced a new state record when Mark Agner of Roanoke caught a 7 lb. 1 oz. pickerel. The lake produced a total of 18 pickerel citations.

A daily fee-fishing permit costs \$3.50 and after Labor Day until closing, general trout regulations apply and a trout stamp is required.

This 11-acre water supply reservoir is located in George Washington National Forest. It is a steep-banked, and heavily wooded lake, accessible to carry-in boats and canoes only.

To get there take Route 606 from Clifton Forge.

The lake is a Lexington Water Supply Reservoir of 22 acres. It is a put-n-grow lake that is stocked annually with brook trout. Mohn says that the brookies have done well in the reservoir and many measure 9 to 13 inches in length.

A daily permit is required and is available from the Lexington Recreation Department (703) 463-9525. Take Route 251 from Lexington to Route 612. The access road is off Route 612 at Oakdale.

Elkhorn is a 54-acre reservoir located in the George Washington National Forest in Augusta County.

There is a dirt boat ramp for small boaters, parking, pit toilets and prim-

Elkhorn Lake is located on Forest Service Road 96 north of Route 250 west from Staunton.

Hearthstone is a 14-acre Soil Conservation Service located in the George Washington National Forest in Augusta County. It is a put-n-take rainbow trout lake. A trout stamp and a forest stamp are both required.

Sherando Lakes (Augusta County)

It was stocked with walleyes in 1988-89. Bluegill and redear sunfish have started to develop with the help of an artificial feeding program by the U.S. Forest Service. Channel catfish are also present.

The Sherando Lakes are located off of Forest Road 91 about five miles south of Sherando (Route 614) in Augusta County.

Mill Creek (17 acres) and Coles Run (13 acres), are located in the Pedlar Ranger District of the George Washington National Forest. They will be open to fishing on the opening of trout season.

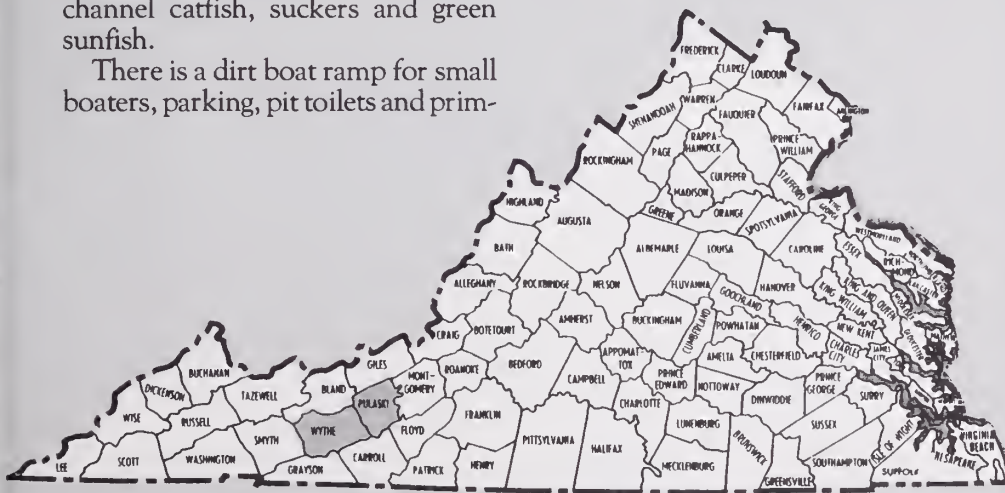
There are no facilities and access is about a half mile walk. For more information, call the Pedlar Ranger District in Buena Vista at (703) 261-6105. Access is west of Route 664 at Sherando off of Forest Road 42.

Staunton Dam Reservoir is a 23-acre U.S. Forest Service lake which has largemouth bass and bluegills. Bank fishing is allowed at the dam.

The lake stretches for some 21 miles and consists of 4,475 acres of water.

Biologist Joe Williams regards Claytor Lake as a fantastic white bass fishery, producing 203 citations last year. There was an excellent year-class in 1987 and growth rates were excellent in 1988.

Striped bass are stocked annually by the Department. They seem to be growing faster up to four years than in other lakes, but then seem to slow down. Williams notes that striper fishing has become a night-time activity in recent years.



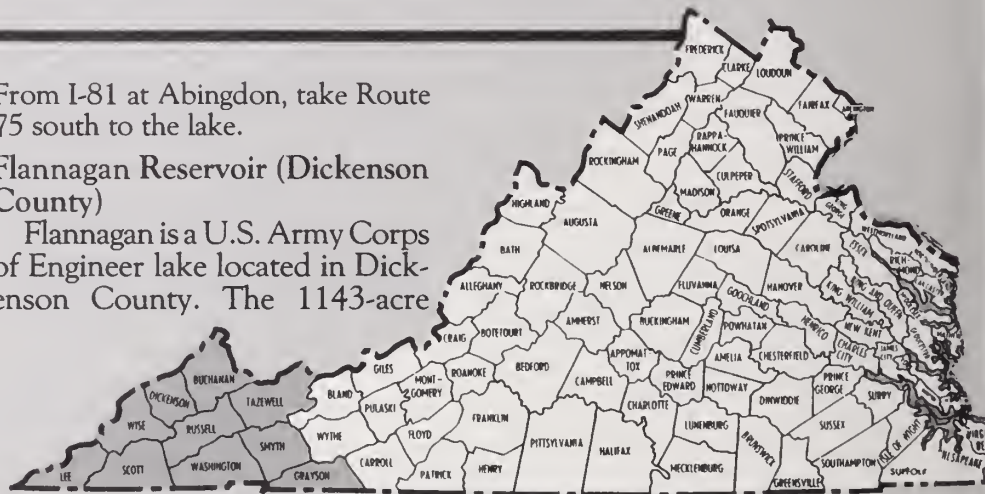
Claytor Lake State Park, located on the north side of the lake, provides 497 acres of camping, cottages and swimming beach, as well as a fine marina.

Gatewood is a beautiful, scenic lake and a good family spot. Boats are available for rent and shorefishing is allowed. There's a well-run camp-

There is a boat ramp, shelter and campground but no concession at this time. Electric motors only are allowed. The lake is open 24 hours a day. It is easily accessible from I-81 or Route 11 to Route 749; Route 677 and then Route 671.

Anglers will find boat ramps and marinas at Wolf Creek, Wheeler's Dock and Spring Creek. Camping is available at Washington County Park.

Flannagan is a U.S. Army Corps of Engineer lake located in Dickenson County. The 1143-acre



Flannagan has one of the better walleye populations in the state. Due to adequate natural forage, and because anglers are still learn-

The reservoir is bordered on the west by the Clinch Ranger District of the Jefferson National Forest. There are boat ramps near the dam overlook, near the confluence of the Pound and Cranesnest River arms, and near

Poplar Branch on the east side of Cranesnest and Lower Twin Branch on the west side of Cranesnest.

The reservoir is located near Haysi and Clinchco off of Route 63 west from Haysi.

North Fork Pound Reservoir (Wise County)

If you want to get your name in the record books, Fish Biologist Assistant J. H. Jessee says to try North Fork Pound for spotted bass. Populations are shifting from largemouth bass to spotted bass, making North Fork Pound a top lake for that species.

Located in the Clinch Ranger District of the Jefferson National Forest, the impoundment encompasses 154 acres with 13.5 miles of wooded shoreline. A National Forest Stamp is not required to fish the reservoir.

The lake has quality bluegill fishing and good crappie fishing. Muskies that were stocked a few years ago are reaching legal size, and showing excellent growth rates. Channel catfish have also been stocked and there are fair populations of smallmouth bass and redbreast sunfish, too.

There are boat ramps at Pound and Wise Landing, with campgrounds and picknicking at Canepatch, Phillips Creek, Hopkins Branch (primitive) and Laurel Fork.

To get to the lake, take U.S. 23 to Pound; turn west off of the bypass, onto Route 630 and a half mile north of Business Rt. 23. Follow 630 for a mile to the dam at Pound Landing.

Keokee Lake (Lee County)

Jessee rates this Department-owned lake as a "top quality" lake with good populations of largemouth bass and an "excellent bluegill fishery." Keokee is a 92-acre lake with wooded shores, located in the Clinch Ranger District of the Jefferson National Forest.

Channel catfish are regularly caught according to reports, says Jessee. "Redear sunfish are not numerous but the ones we have are good size—in the 9-10 inch range."

While there are some trails around the lake, shorefishing is difficult and

boat fishing is almost a necessity. There is a boat ramp and restroom facilities maintained by the Forest Service. The lake is open 24 hours a day and a National Forest Stamp is required. There are no campground facilities at the lake. A 12-inch size limit is in effect on largemouth bass.

Keokee Lake is located near the village of Keokee in Lee County. Take Route 23 and Alternate 58 north from Big Stone Gap, then west on Route 68 to Route 623; then east on 623 to the lake.

Hungry Mother Lake (Smyth County)

The lake provides good largemouth fishing, quality bluegill and good crappie (up to 13 inches) fishing.

The 108-acre lake is located in Hungry Mother State Park just north of Marion in Smyth County. It is open 24 hours a day and camping is available on the 2180-acre park. Boats are rented during the day and a new boat ramp is scheduled for completion in 1990.

Hidden Valley Lake (Washington County)

This is a Department-owned impoundment in the Hidden Valley Wildlife Management Area in Washington County. Its 61 acres is nestled in the mountains at 3500 feet.

The lake is scheduled to be reopened in July 1990. The delay will allow smallmouth bass to spawn one more time, giving one more spring of natural reproduction before opening the season.

Fishing will be allowed 24 hours a day. No campground facilities are available and no camping is allowed within 100 yards of the lake shoreline. There is a primitive boat ramp for launching.

To get to Hidden Valley Lake, take Route 19 and Alternate 58 north, then onto Route 690 to the lake.

Laurel Bed Lake (Russell County)

Laurel Bed is a fee-fishing lake located on the Clinch Mountain Wildlife Management Area in Russell County. This 300-acre lake lies in a formerly, boggy depression on the

top of Clinch Mountain. It is surrounded by second growth red spruce, cedar and hemlock.

Jessee says that fingerling trout are stocked in November at a ratio of 300 rainbows to 900 brook trout.

A daily permit is required, which can be obtained from the concession at the entrance to the management area. There is a concrete boat ramp for private boats. No trout license is required during the fee-fishing season (opening day until Labor Day). After that, a trout license is required until closing on November 1.

Take Route 107 from Chilhowie to Saltville; turn left on Route 91 to Route 634 at Allison Gap; then left on Route 613 to Route 747, turn right and into the area.

Lake Whitten (Tazewell County)

Whitten is a new 52-acre Soil Conservation Service Lake in Tazewell County. Adult smallmouth bass and redbreast sunfish have been stocked along with largemouth bass.

A new boat ramp will be built and the lake will open sometime in 1991. The county plans facility development in the future.

Take Route 16 north out of Tazewell to Route 643, then to the lake.

Bear Tree (Washington County)

Bear Tree is a 12-acre impoundment in Washington County. It's a cool-water lake with forested shores located in the Mount Rogers National Recreation Area of the Jefferson National Forest.

It was opened in 1981 as a put-n-take trout fishery. It receives five in-season stockings of trout. The lake opens to fishing on opening day of trout season and closes along with designated trout water closures.

The Forest Service maintains a 138-site campground in the area. Bear Tree is located just off of Route 58 near Damascus.

Bark Camp Lake (formerly Corder Bottom or Scott-Wise) (Scott County)

Bark Camp is located in the Clinch Ranger District of the Jefferson National Forest in Scott County. It's a Department-owned lake of 48 acres

Lincolnshire Reservoir (Tazewell County)

This Tazewell County lake is 20 acres in size. Weed problems have been hindering attempts to improve this lake.

The lake has largemouth bass and bluegills and is stocked with channel catfish and some muskies.

The lake has a new ramp for private boats and can be reached via Route U.S. 460 at Tazewell.

Hales Lake (Grayson County)

This Grayson County lake is a put-n-take trout lake with shorefishing only. Out of Sugar Grove, take Route 614 to 612, then Route 798 to the lake.

Laurel Lake (Dickenson County)

Laurel is a 12-acre lake in the Breaks Interstate Park in Dickenson County, that has a population of bluegill and largemouth bass. From Van-

sant take Route 83 west, then Route 80 north to the park. and its brown-stained, cool water is surrounded by rugged, wooded mountains.

Jessee says the lake "supports some good bluegill fishing and some quality crappie fishing, but largemouth bass are sub-par based on samplings."

The lake also has northern pike and one weighing 23 pounds has been taken from it. There is still some natural reproduction, but pike populations are dwindling.

The main use of the lake is as a put-n-take trout fishing lake. Trout are stocked preseason, then about five other times until June. The lake is considered designated stocked trout waters and is closed to fishing during the closed season for trout. It reopens with the general trout season and a trout stamp and a National Forest Stamp is required.

There is a ramp, picnic areas and camping areas. Bark Camp is located between Dungannon and Tacoma on Routes 653 and 706.

Clear Creek (Washington County)

Clear Creek is a Tennessee Valley Authority impoundment of 40 acres. It is a shallow lake, high in sediment and receives runoff from surrounding farmlands. On top of this over fertilizing effect, it has an abundance of carp.

The lake has poor largemouth bass and bluegill populations. Musklunge and a few walleyes are being stocked as a trial.

The property around the lake is managed by the Bristol Park Authority, (703) 466-8310, and there are no facilities. Take I-81 to Exit 4, then Route 659 to Route 645, then Route 625 to the lake.

Chesdin Reservoir (Chesterfield/Dinwiddie Counties)

Lake Chesdin is a 3,100-acre water supply reservoir.

Chesdin is a productive lake that offers good largemouth bass fishing, big crappies in spring and fall, big bluegills and channel catfish. There is a 12-15 inch slot limit on the largemouths.

Chesdin produced 70 citations of seven species in 1989; nine largemouth bass and seven crappies were among the total.

There is a public boat ramp off of Route 601 and several marinas with boat ramps, rental boats, camping and picnicking off of Routes 601, 36 and 623. From Richmond, take I-95 south to Colonial Heights; U.S. Route 1 to Route 36, then west.

Rivanna Reservoir (Albemarle County)

The 450-acre contains largemouth bass, bluegill, redear sunfish, pumpkinseed sunfish, crappie, channel catfish, walleye and northern pike.

One of the outstanding fisheries, is the reservoir's channel catfish. Wal-

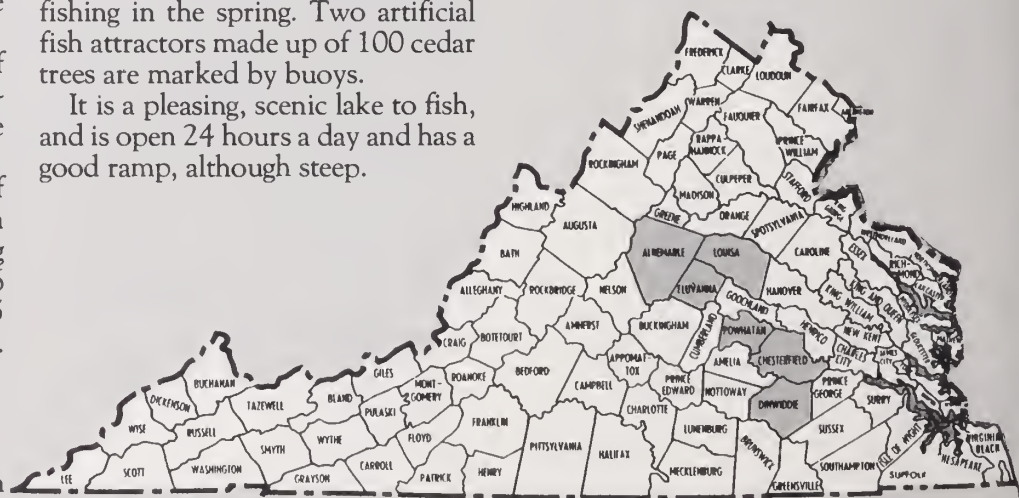
leyes reaching three pounds are abundant. It is located on Route 659 off Route 631 (Rio Road).

Fluvanna-Ruritan Lake

This 50-acre Department-owned lake is considered the area's best bluegill lake. Largemouth bass are good; walleye fair and there is good crappie fishing in the spring. Two artificial fish attractors made up of 100 cedar trees are marked by buoys.

It is a pleasing, scenic lake to fish, and is open 24 hours a day and has a good ramp, although steep.

Best time for crappies is April-May; largemouth bass in June-July and October-November; and big bluegills in May and deep in summer. The lake is on Route 619 off of Route 53 at Cunningham.



Powhatan Lakes (Powhatan County)

Powhatan Lakes are a pair of lakes of 40 and 26 acres located in the Powhatan Wildlife Management Area.

These lakes contain largemouth bass, crappie, bluegills, chain pickerel, channel catfish, pumpkinseed sunfish and redear sunfish. Crappie fishing has been especially productive in spring and fall. Two brush attractors have been sunk in the lake for the angler's benefit.

There are no facilities and only dirt ramps. Bank fishing is allowed, but difficult due to the brushy shores and aquatic vegetation. Electric motors only are allowed.

Powhatan Ponds (Powhatan County)

The Powhatan Ponds are three small ponds of nine, eight and two acres, also located on the Powhatan Wildlife Management Area. They contain largemouth bass, bluegill, crappie, redear sunfish and pumpkinseed sunfish. Five largemouth bass per day can be creeled.

There is a ramp to launch carry-in carts and canoes only and only electrics are allowed.

Beaver Creek Reservoir (Albemarle County)

This scenic 104-acre lake has largemouth bass, bluegills, redears, pumpkinseed sunfish, channel catfish, walleye and northern pike. The lake has a good ramp but limited parking. Take Route 680 from Route 250-240 junction, west of Charlottesville.

Albemarle Lake (Albemarle County)

A few years ago, a 12-15 inch slot limit was put into effect on the 35-acre Department-owned lake, and angler reports are indicating that the largemouth fishery is improving.

Bluegill and crappies have always been of good sizes in this lake, and channel catfish, walleye and northern pike are stocked regularly.

There is a gravel ramp for private boats and parking, one marked fish

attractor and fishing is allowed from one hour before sunrise to 11:00 p.m.

From Routes 240-250 junction near Crozet, take 680 to 614, then turn right on 675 to the lake.

Ragged Mountain Reservoirs (Albemarle County)

These two lakes total 50 acres and contain largemouth bass and bluegills. There is no drive-in access or boat ramp. Fishing is by permit only, and boats must be carried in.

Take Route 702 off Route 29. For permit information, call (804) 977-2970.

Chris Greene Reservoir (Albemarle County)

This 62-acre Albemarle County Parks lake has some good crappie fishing and a 12-15 inch slot limit should improve the bass fishery. The lake has a lot of sunfish, too. It's on Route 606, one mile from the airport.

Totier Creek (Albemarle County)

Totier Creek is a 66-acre Albemarle County Parks lake. Drained in 1985-86, it has been restocked with largemouth bass, bluegill, redear and channel catfish. Chain pickerel find their way into the lake through the spillway during high water. It's located off of Route 6 on Route 726 west of Scottsville.

Northeast Creek (Louisa County)

Northeast Creek is a 175-acre lake with about 30 acres of trees left standing in its bottom that provide excellent cover. The lake contains largemouth bass, bluegills, redear sunfish, crappie, chain pickerel and channel catfish.

There is a 15-inch minimum size limit on bass. The lake has a ramp and electrics only are allowed. Bank fishing is allowed in areas and the lake is open from one hour before sunrise to one hour after sunset.

Take Route 33 east for 4½ miles from Louisa Courthouse; the lake is on the left. For permit information, write the Louisa County Water Authority, P.O. Box 9, Louisa, Virginia 23093.

Lakeview Reservoir (Chesterfield County)

Lakeview is a 42-acre lake with largemouth bass, crappie, bluegills, channel catfish, redear and carp. There's a 12-inch minimum size limit on bass. There is a boat ramp with limited bank fishing and no facilities. Electric motors only are allowed.

Take Route 1 south to Lakeview Road; turn right and go one mile to Brander's Bridge Road, then right for a half mile to the lake.

Wilcox Lake (Richmond)

Wilcox is a City of Petersburg Park lake of 18 acres. It has largemouth bass, crappie, bluegills, channel catfish and northern pike. There is no ramp, but boat rentals are available as are picnic facilities. Electric motors only are allowed.

Take I-95 south to Crater Road Exit (Petersburg); take Crater Road south a half mile to South Boulevard; turn right and go a mile and a half to the lake.

Swift Creek Lake (Chesterfield County)

Swift Creek Lake (not reservoir) is a 107-acre lake located within the Pocahontas State Park. It has largemouth bass, bluegills and crappie, and there is a 12-inch minimum size limit on bass. Electrics only are allowed and there is a boat rental, bank fishing and picnic grounds.

Take Route 10 south to Route 655 (Beach Road) to Route 780.

Gordonsville Lake (Louisa Co.)

This is a private, 81-acre lake with largemouth bass, channel catfish, crappie and bluegills. It has a ramp and a permit is required. From I-64 west, take Route 15 to Boswell's Tavern, then Route 603 to the lake. For permit information, call (703) 967-2166.

Sugar Hollow (Albemarle Co.)

Its 47 acres are stocked with rainbow trout, brook trout and also has largemouth bass and bluegills. No boats are allowed. Take Route 614 west of Whitehall to the lake.

There are a number of private marinas, boat ramps and boat rentals that provide access to the lake but no public access.

Waller Mill (Williamsburg)

Waller Mill is a 360-acre lake owned by the city of Williamsburg. The clear-water lake is located in the 1,500-acre Waller Mill Park which provides a good concrete ramp, boat, canoe and accessories rentals and a minimum fee to fish. There are also picnic and restroom facilities and nature trails to make it a family attraction.

The lake has some good striped bass populations, and there have

up to five pounds. The lake has average largemouth bass and bluegills and some decent channel catfish and crappie. Seven sunfish citations came out of Little Creek in 1989.

Little Creek is a 996-acre Newport News City Reservoir with very clear water. The ramp and boat rental concession is administered by the county and a small fee is charged. From U.S. 60 Toano, take Route 610 to Lakeview Drive.

Lee Hall (Newport News)

Lee Hall (Newport News City Reservoir) is a 230-acre lake with forested shores, located in Newport News City Park. It's an average fishery for largemouth bass and sunfish. Other species in the lake are white perch, chain pickerel, crappie and yellow perch.

Lee Hall is another excellent family spot. There is a small fee required to fish. It's located off of Route 143.

Diascund Reservoir (New Kent/James City County)

The 1,700-acre Diascund Reservoir has largemouth bass, crappie, pickerel, and bluegills. Diascund recorded 11 chain pickerel citations in 1989.

There is a concession for boat rentals and bait and tackle. Electric motors only are allowed and there is no bank fishing. Check with the Newport News Department of Parks and Recreation for additional information. Take Route U.S. 60 from Providence Forge off of Route 603.

Harwoods Mill (York County)

Harwoods Mill (244 acres) has good numbers of northern pike and led the state with nine citations! It has good channel catfish populations, average largemouth bass and bluegill and some crappie. There are also a few walleyes from previous stockings.

Being a water-supply reservoir, it is treated with copper sulphate which prevents good fish growth or production. There is a concession and ramp where boats can be rented. It's located on Route 173, east off of U.S. 17.

Gardy's Mill Pond (Northumberland County)

This old mill pond of 75 acres, with a rebuilt dam and a newly designed spillway, was reopened in February 1990. It's a "new" lake with a high population of adult fish that should provide some excellent fishing.

Largemouth bass, bluegill, crappie, channel catfish and chain pickerel are present in good numbers. Present plans call for the continued stocking of channel catfish. This Department-owned lake has a concrete ramp and service pier. It's located on Route 202 west of Callao.

Lake Maury (Newport News)

Lake Maury is owned by the Mariner's Museum. This 165-acre lake has been stocked with stripers in the past, and more recently with northern pike in order to control the stunted populations of bluegills and white perch.

No private boats are allowed, but boats can be rented at the lake. The lake is closed during the winter months.

Chandler's Mill Pond (Westmoreland County)

This Department-owned lake of 75 acres has limited access and boats must be carried to the lake. Largemouth bass populations are good as are crappies and the lake also has a small population of fliers. Fowler says that channel catfish will be stocked in the future. It's located on Route 3 just south of Westmoreland State Park.

Lake Harrison (Charles City County)

Lake Harrison is an 82-acre lake located just above the Lake Harrison National Fish Hatchery. The lake had been drawn down a couple of years ago in order to rebuild the dam and construct a fishway to enable herring to pass over the dam.

High populations of warmouth, bluegill, redear and largemouths are present and by 1991 the lake should provide some better fishing.

There is a ramp and gas motors up to five horsepower are allowed.



been a number of fish in the 15-18 pound range caught.

Largemouth bass are a little below average in size but an occasional five pounder shows up. The lake also has some big yellow perch in addition to crappie, chain pickerel and channel catfish.

The park closes about mid-December and normally opens in early-March. Waller Mill is off of Route 645 (Airport Road) between U.S. 60 and I-64.

Little Creek (Toano) Reservoir (James City County)

Little Creek Reservoir has a good walleye population with some going

Western Branch (Suffolk)

Western Branch is stocked with muskies, stripers and walleyes every year. Growth rates, for the most part, are average.

Fisheries Biologist Ron Southwick says the lake has good striped bass populations—with stripers over 20 pounds becoming common.

Muskies in the lake are stocked mainly as a trophy fish, and largemouth bass are abundant and provide excellent fishing.

Western Branch also produced 10 citation walleyes in 1989.

Southwick says that white perch, yellow perch, bluegill and redear sunfish are "outstanding," and "the potential for catching a citation of each of these species in one day is excellent." In 1989, Western Branch yielded 76 citation white perch, 40 sunfish and 30 yellow perch.

The lake has two ramps, one just below the Burnt Mills Lake Dam off of Route 603 near Everetts and a new ramp and concession just below the Lake Prince Dam off Route 605 near Providence Church on U.S. Route 460. The lake is owned by the City of Norfolk which requires annual and daily permits for private boats and to fish. Contact either the City of Norfolk or the concessionaire for information.

Lake Prince (Suffolk)

Lake Prince is a 777-acre lake with numerous long, narrow coves extending out from the main body of the lake.

Prince is stocked annually with stripers and has developed into a good fishery. Striped bass of 20 pounds are not uncommon. Prince gave up 17 citation stripers last year.

Prince has excellent largemouth bass, bluegill and redear sunfish populations, black crappie and some big chain pickerel are found in the lake, too. Prince topped the state with 50 citation sunfish.

There is a fish station and boat ramp located off of U.S. 460 at Providence Church on Route 604 (Lake Prince Road) in Suffolk. The same costs apply to Lake Prince as to Western Branch.



Lake Whitehurst (Virginia Beach/Norfolk)

This 458-acre lake is a sister lake to Lake Smith which is separated by Northampton Boulevard (Route 13) in Virginia Beach. Lake Whitehurst has become a walleye hotspot with many fish in the 4-6 lb. range and one of the few lakes where anglers have caught walleyes consistently.

The lake still has some hybrid stripers from earlier stockings. There aren't many largemouth bass, but the ones that are caught are big. There are also good channel catfish populations. Other species include black crappie, bluegill, white perch and redear. Overall, Whitehurst yielded 69 citations of 8 species including 24 walleyes, 16 channel cats, eight largemouth bass and 10 chain pickerel.

There are two ramps on the lake, a dirt ramp at Northampton Boulevard across from the Lake Smith Fishing Station and a ramp at Azalea Gardens. A Norfolk City boat permit is required to get a permit to launch and fish.

Lake Smith (Virginia Beach)

Lake Smith, across from Lake Whitehurst, is similar but lacks deep water. Its 222 acres average only 5 ft. in depth. Like Whitehurst, it has mostly wooded shores, and is highly productive.

Largemouth bass populations are not high, but the opportunity to catch a citation is there. The average size largemouth is larger than in any other area lakes.

The lake also has walleyes, channel catfish, hybrid stripers, crappies, white perch and bluegill. Overall,

Smith had 49 citations checked in and 17 of them were walleyes. Boat rentals and permits are available at the Lake Smith Fishing Station.

Lake Trashmore (Virginia Beach)

Southwick tells us not be deterred by the name of this lake, because it produces some excellent fishing. Most fish are caught from shore. It is a deep, 52-acre lake, with a sharp, sloping bottom. A few small tire reef structures had been put out in the past, plus two, large, triangle tire reefs as fish attractors. It's open year-round to shorefishing. Boats can be rented from late-spring to early-fall. No private boats are allowed.

It is stocked with stripers and walleyes annually and has been stocked in the past with channel catfish and redears. Citation stripers, walleyes, largemouths and channel catfish have been taken out of Trashmore.

Lake Trashmore is located within Mount Trashmore City Park in Virginia Beach off of the Virginia Beach Expressway (Route 44) at the Pembroke Exit. The park has picnic shelters, grills restrooms, playground and a concession.

Lake Cohoon (Suffolk)

Lake Cohoon is a 510-acre water supply reservoir for the City of Portsmouth. It is known as one of the Suffolk Lakes.

Cohoon is an excellent largemouth bass, crappie, chain pickerel and redear sunfish lake. Of the 60 citations that came out of Cohoon, 23 were crappie, 15 chain pickerel and 17 yellow perch. The Cohoon-Meade

Fishing Station provides a boat ramp and boat rentals.

Gas motors up to 10 horsepower are allowed. Permits are required and are available from the station which is located on Route 604 (Pitch Kettle Road) off Route 58 in Suffolk.

Lake Meade (Suffolk)

Located just below the Cohoon Dam and serviced by the same fishing station, Lake Meade is a 512-acre water supply reservoir for Portsmouth.

Striped bass are stocked annually, providing a good striper fishery. The lake also provides excellent largemouth bass, bluegill, crappie and redear fishing. Eight citation sunfish came out of Meade in 1989.

Lake Kilby (Suffolk)

The 222-acre Lake Kilby has big bluegills, redears, largemouth bass, crappie and chain pickerel. Fliers flourish in the dark waters and northern pike are still being stocked.

There are no boat rentals but a ramp is available for private boats. Permits are available at the Cohoon-Meade Fishing Station.

Burnt Mills (Isle of Wight County)

This is another Norfolk City Water Supply Reservoir located in Suffolk and Isle of Wight. It consists of 610 acres with forested shores and a lot of stumps.

The lake has good largemouth bass, crappie, bluegill, chain pickerel and yellow perch. It produced a total of 41 citations including 11 largemouth bass, and 14 chain pickerel.

Equipped with a dirt ramp and limited parking, private boat and fishing permits must be obtained from the Western Branch Fishing Station.

Speight's Run (Suffolk)

Speight's Run is a 197-acre lake that overflows into Lake Kilby. The necessary permits must be obtained from the Cohoon-Meade Fishing Station.

There is a dirt ramp with limited parking. The lake contains largemouth bass, bluegills, redears and crappie and it gets very little fishing pressure.

Lake Airfield (Sussex County)

Lake Airfield is a 105-acre lake with a large watershed, surrounded by mixed pine and hardwood forests.

Its acid-stained waters contain largemouth bass, crappie, chain pickerel, fliers, bluegills and yellow perch.

Lake Drummond (Chesapeake/Suffolk)

Lake Drummond is a bowl-shaped acid-type water. Its 3,142 acres can get very treacherous in strong winds.

The only access to the lake is by feeder ditch off of the Dismal Swamp Canal from a ramp on Route 17. It is three miles up the ditch to a lock and a self-operated winch that pulls boats up over a dam into the lake. It is managed and serviced by the U.S. Army Corps of Engineers.

The lake has crappie, yellow perch, chain pickerel and fliers. Crappies are best in March and April. Drummond produced 22 citation crappies in 1989.

Back Bay (Virginia Beach)

Back Bay still produces excellent white perch and channel catfish along with some flounder and other salt-water species. The freshwater creeks feeding into the Bay have excellent populations of largemouth bass, bluegills and crappie. The Bay gave up a total of 57 citations including 14 channel catfish and 33 white perch.

Lone Star Lakes (Suffolk)

The Lone Star Lakes are a series of 12 lakes or ponds varying in size from a few acres up to 49 acres. They were originally marl pits and all are interconnected. They are surrounded by 1,172 acres of land that provide picnicking and hiking.

The lakes vary from brackish to deep, crystal clear to shallow, dark-stained waters. The upper or northern lakes are deep and clear and the lower lakes are shallow and stump-filled.

Among the best are Crane Lake which opens into Chuckatuck Creek. It has a good population of striped bass, largemouth bass, bluegills, and crappie.

Butler Tract, Crystal and Annette lakes are stocked with walleyes and

northern pike annually, and also contain largemouth bass, bluegills and white perch.

Cedar Lake has largemouth bass, crappie and bluegills, while Lake Wahoo and Southern Lake, contain largemouth bass, crappie and bluegills and are stocked with northern pike.

Southwick says that all the lakes are difficult to fish due to the steep shores, but they produce excellent fishing.

All the lakes have boat ramps. Some are dirt, some paved, some steep and some shallow. No boats are rented and electric motors only are allowed.

Emporia Reservoir (Greensville County)

Emporia Reservoir is a 210-acre reservoir on the Meherrin River. It is a turbid lake and difficult to fish. The lake contains largemouth bass, bluegills and crappie. It has a boat ramp with limited parking.

Buggs Island (Charlotte/Halifax Mecklenburg Counties)

Regional Supervising Biologist A. L. "Bud" LaRoche and Biologist Bill Kittrell report that surveys on largemouth bass show they are averaging 2 1/2 lb. and show consistently excellent reproduction. Best fishing is on the upper end of the lake and lower end creeks. Fourteen citations were recorded in 1989. Structure is critical and water fluctuations affect structure.

Buggs Island consistently produces citation striped bass with 98 citations awarded in 1989.

White bass are booming on Buggs Island. Fish are averaging about a pound. Best fishing is in spring with males moving upriver in about the third week in March, peaking in the first two weeks of April. They are caught all summer, as far down as North Bend Park. Anglers checked in 81 citation white bass in 1989.

Buggs Island is probably the best crappie lake in Virginia with blacks



averaging about $\frac{1}{2}$ pound and whites about a pound.

Gaston Reservoir (Brunswick/Mecklenburg Counties)

Located just below Buggs Island in the Staunton River system, Gaston remains an excellent largemouth bass lake. Twenty-four citation largemouths were recorded in 1989, second only to Lake Anna.

Striped bass remain good and continue to produce citations.

Walleyes show a strong population with limited natural reproduction. Thirteen citation walleyes were checked in last year.

Gaston also has good-sized crappies, 1 lb. average white perch, channel catfish, chain pickerel and bluegill. Overall, the lake produced 353 citations of 11 species.

Briery Creek (Prince Edward County)

Briery Creek located near Farmville is largely a catch-and-release largemouth bass fishery. This Department lake shows excellent reproduction but the expected big fish are not showing up.

The lake is an excellent chain pickerel fishery, with 1989 samplings regularly showing 3 lb. fish.

Channel catfish are doing well with several 3-5 lb. fish showing up in 1989 samplings.

Crappies are a developing fishery. Bluegills and redears can be found in the $\frac{1}{2}$ lb range and $1\frac{1}{2}$ lb. bullheads are common.

The lake has a gravel ramp with plans being developed for two concrete ramps and a concession. Briery still has an 18-inch, two bass limit. Up to 10 horsepower gas motors are allowed. The lake opens one hour

before sunrise and closes one hour after sunset.

Nottoway Lake (Nottoway County)

Nottoway is a Department lake with a lot of standing timber and abundant largemouth bass populations. The high bass population keeps bluegills and redears in check, resulting in a fantastic sunfish fishery with numerous fish in the $\frac{1}{3}$ to $\frac{1}{2}$ lb. range.

Crappie are fair, showing an average of about $\frac{1}{4}$ lb. Channel catfish are stocked every other year, and the lake has a good chain pickerel population.

Amelia Lake (Amelia County)

Located in the Amelia Wildlife Management Area, the lake has abundant largemouth populations. A 12-15 inch slot limit on largemouth bass should improve size and numbers.

Bluegills and redear are good with fish averaging about $\frac{1}{3}$ lb. Crappie are fair and channel catfish are stocked every other year.

Walleye are stocked on alternating years, and are mostly concentrated in the deeper water near the dam.

Amelia has a ramp, restroom facilities and a floating fishing pier that provides fishing opportunities for the handicapped and other shore-bound anglers.

Lake Connor (Halifax County)

Connor is a Game Department lake that came into prominence when some big largemouth bass started showing up. Some years ago the lake was stocked with Florida strain bass. They apparently have hybridized with the northern largemouth resulting in a number of 13-lb. plus bass, includ-

ing the present state record largemouth of 16 lbs. 4 oz.

However, the lake's small size may put the lake's bass fishery in jeopardy if it receives too much pressure. Thus, the lake now has a 15-inch minimum size limit on bass.

Connor also has tremendous bluegill and redear populations. Crappie are doing well and channel catfish are stocked on alternating years.

Lake Gordon (Mecklenburg County)

This Game Department lake has good largemouth bass and sunfish populations; fair crappie populations. It also has chain pickerel and is a very good channel catfish lake. The lake has a ramp with limited parking.

Lake Brunswick (Brunswick County)

This Game Department lake is a good sunfish lake with bluegill and redear in good sizes. It's also a good largemouth lake in terms of numbers, but they are mostly small.

Crappie populations are good and they average about 10 inches. The lake also has some good-sized yellow perch.

Prince Edward/Goodwin Lakes (Prince Edward County)

These two lakes are part of Twin Lakes State Park. The park offers campgrounds, cabins, boat ramps, rentals and swimming. Some fish shelters have been built. Both lakes have sunfish, largemouth bass, crappie and channel catfish.

Fort Pickett Lakes (Nottoway/Dinwiddie Counties)

A permit is required from the Fort Pickett Resources Office to fish the many ponds and lakes on Fort Pickett located east of Blackstone. They contain largemouth bass, sunfish, crappie and channel catfish.

Pickett Reservoir is best for largemouth bass and Twin Lake has an excellent population of nice-sized bluegills.

Modest Creek Reservoir (Lunenburg County)

Modest Creek is located off Rt. 49 north of Victoria. The reservoir has good largemouth bass fishing along with sunfish and channel catfish. The

access road is not in good shape and it has a dirt ramp.

Keysville Reservoir (Charlotte County)

Keysville Reservoir is another water supply reservoir. It has a poor access road with only a dirt ramp, but it may be worth the effort to fish since the lake has large redear sunfish populations, "and they are big," according to LaRoche and Kittrell.

Bluegills are good, pickerel and crappie fair. There are good populations of largemouth bass but they are small. The reservoir contains channel catfish as well.

Smith Mountain Lake (Bedford, Franklin, Pittsylvania Counties)

The largemouth bass fishery on Smith Mountain Lake has come a long way, according to Fisheries Biologist Mike Duval. "It's the best it's been since the 70s." Ten largemouth bass citations were recorded in 1989.

The striper fishery has to be the most notable fishery on Smith Mountain Lake. There were nearly 800 citations caught in 1989. According to Duval, this spring should produce many 22-24 inch fish.

Some 50,000 walleye fingerlings are stocked every other year. A few anglers are fishing for and catching them and 105 citations were awarded in 1989.

The Blackwater and Gills Creek arms are tops in producing muskies and the big reservoir gives up some big ones each year. Anglers checked in 14 citation muskies in 1989.

Smallmouth bass have improved as habitat has improved with better water quality, and 55 citations were recorded. Crappie are best on the upper ends of the reservoir where the structure is. White bass are also abundant.

Smith Mountain Lake led all state waters with 1,032 citations of 18 species!

Philpott Reservoir (Franklin/Henry/Patrick Counties)

Smallmouth bass, walleye and trout are the main attractions here.



McConaughy strain rainbow trout are running 3 to 5 lbs.; anglers troll 45 to 50 feet deep for trout, often at night. Brown trout should be coming on strong in two or three years.

Smallmouth bass are caught deep in summer, often at night, 20-30 feet deep, and average two or three pounds.

Walleyes are stocked on alternating years and are reproducing naturally on a limited basis. Thirty-nine citation walleyes were registered in 1989.

Other opportunities included crappie, channel catfish, largemouth bass and redbreast sunfish. Philpott produced 70 citations in 1989.

Carvin's Cove (Botetourt/Roanoke Counties)

Biologist Joe Williams reports that 1989 electrofishing sampling showed the best ever largemouth bass population in both size and numbers. Samplings also showed a lot of big crappies, but due to little or no cover, the fish are scattered and anglers have trouble finding them.

Many striped bass 20 pounds and up have come out of the lake, with some 30 pounds or more being reported. Anglers registered 34 citations for 1989. New stockings are being considered for the future. Carvin's Cove is a scenic lake with a boat ramp and picnic area.

Leesville Reservoir (Campbell/Pittsylvania Counties)

Striped bass are doing well here and fishing pressure is starting to increase. Leesville gave up 71 citation stripers in 1989.

White bass are averaging a pound and offering some great fishing. There were 17 citations recorded for 1989.

Crappie are good at certain times of the year, but cover for them is limited due to water fluctuations. Samplings of walleyes in 1988 showed fish averaging 3 lbs., and largemouth bass had a good spawning season that year.

Overall, this reservoir produced 105 citations of six species.

Lake Burton (Pittsylvania County)

Lake Burton has an excellent largemouth bass fishery with many six pound-plus fish showing up in the 1989 samples.

Channel catfish are doing very well with fish up to 12 pounds and nice crappies with some 3 pounders showing up in spring samplings.

This 76-acre Department lake has a good boat ramp and is located six miles north of Callands via route 969 and 800.

Lake Nelson (Nelson County)

Nelson is a Game Department lake located in the foothills of the Blue Ridge, south of Lovingston via Highway 29 to Colleen and Route 655 to Arrington then left on Route 812.

Recent samplings show that the bass size structure is improving with the new 12-15 inch slot limit of the past three years. Bass sizes are larger and numbers are up.

The lake provides some good channel catfish with up to 20 pounders being caught. Black crappie and bluegills are also available.

There are some fish attractors marked with buoys. The lake is under new concession management with boat rentals and a boat ramp available.

Fairystone Lake (Patrick County)

Fairystone Lake, located in Fair-

stone State Park is showing good numbers of big largemouth bass.

Fairystone is a 168-acre lake with a good amount of cover. Park personnel have been building fish shelters each year to add to the cover.

Bluegill samplings in 1989 show good numbers and good sizes. Crappie are generally small.

Martinsville (Beaver Creek) Reservoir (Henry County)

Martinsville Reservoir is an under-utilized fishery located north of Martinsville. Samplings in 1989 showed good numbers of largemouth bass in the 12-20 inch range.

The 175-acre reservoir is stocked annually with 500-600 northern pike and also contains crappie, bluegill, redear and channel catfish.

There is a ramp and a lot of bank fishing space available.

Thrasher/Stonehouse/Mill Creek Impoundments (Amherst County)

These lakes are Soil Conservation Service flood control lakes. All three are close together and somewhat similar in characteristics.

Largemouth bass populations are low and fish are small, with a few running 12-13 inches. Sunfish growth is good and the channel catfish fishery is excellent, with five to seven pound fish showing up in samplings from the 34-acre Thrasher and 34-acre Stonehouse. Mill Creek is the newest and largest lake at 189 acres, and is a developing fishery.

All three lakes are family-oriented and provide picnic grounds, playgrounds, restrooms and shorefishing opportunities. There is a boat ramp at each lake, open during daylight only.

White Oak Mountain WMA Ponds (Pittsylvania County)

Five fishable ponds varying in size from ½ to 7 acres provide limited largemouth bass and bluegill fishing. Cartops only can be used on the 7-acre Pete's Pond while the rest are bankfishing only.

The wildlife management area is located east of Chatham off Route 832.



Lake Anna (Louisa/Spotsylvania Counties)

This 9,600 acre lake has several marinas, campgrounds, public ramps and a state park.

Stripers, walleyes, largemouth bass, crappie, yellow perch, white perch, chain pickerel and channel catfish make up the menu. Lake Anna produced the most largemouth citations in 1989 with 27. It also gave up 15 citation stripers, 19 citation channel catfish, and 58 citation walleyes.

Virginia Power has sunk a number of brush and block fish shelters to the benefit of fish and angler alike.

Look for the best largemouth bass and striped bass fishing in spring and fall. There is a 12-15 inch slot limit on largemouth bass and a 20-inch minimum on stripers.

The public ramps on Lake Anna are the Lake Anna Ramp on Route 522 near the Spotsylvania-Orange County Lines, and at Lake Anna State Park, on Route 601 off Route 208. There is a catwalk for handicapped and shorebound anglers at the Third Dike on Route 652.

Occoquan Reservoir (Fairfax County)

Occoquan is a 2,100-acre Fairfax County Water Authority Lake. The lake contains largemouth bass, bluegill, crappie, channel catfish, flathead catfish, white perch, and some white bass and hybrids. Fisheries Biologist Ed Steinkoenig says there are still a few hybrid stripers in the lake, some of which have reached the seven to 10-lb. size. Walleyes have been coming down the watershed from Lake

Manassas and appear to be doing very well. Crappies get big in Occoquan as do flathead catfish. Largemouth bass have a minimum 14-inch size limit.

Ramps and facilities can be found at Fountainhead Park near Woodbridge off of Route 123 to Route 647. More information is available from the Northern Virginia Regional Park Authority (703) 250-9124; or Lake Ridge Park of the Prince William County Parks Authority at (703) 494-5288.

Germantown Lake (Licking Run) (Fairfax County)

This Fauquier County Parks and Recreation lake is located in C. M. Crockett Park. Because it is a new lake, fishing should be especially good because it contains more adult fish than it will ever have again.

The lake contains bass, bluegill, black crappie, channel catfish and blue catfish. Both Florida strain and northern strain largemouths have been stocked with some going over 4 pounds already. Black crappie are about three quarters of a pound and bluegills a half a pound. It has full facilities and a daily entrance fee is charged. There's a 15-inch size limit on bass and a creel limit of two per day.

Mott's Run Reservoir (Stafford County)

Steinkoenig considers Motts Run the best bluegill lake in Northern Virginia. Motts Run is a water supply reservoir just west of Fredericksburg. It's a deep, steep-sided, 160-acre

body of water that normally has only moderate fishing pressure.

The only development it has is the boat ramp and rental concession. The area around the ramp has toilet facilities and a picnic grounds. Electric motors only are allowed. Daily or seasonal permits are required and available from the concession.

The lake produced 8 citation sunfish, and has numerous bluegills in the 8-9 inch range. The lake also has largemouth bass, crappie, channel catfish, white perch and flier. There are northern pike too, and in September 1989, Duke Gardner of Fredericksburg took a 27 lb. 9 oz. state record out of Motts.

Channel catfish are stocked on alternating years. The lake is tough to fish, being clean of structure, steep-sided and deep. An angler has to find the underwater islands. Two fish attractors have been built and are marked with buoys.

The rental facility and ramp opens in late-March or early-April and closes in early-October. For information call (703) 786-8989.

Lake Curtis (Stafford County)

Curtis is a Department-owned lake of 91 acres. Curtis Memorial Park is another fine family facility which provides a swimming pool, grills, picnic tables and boat rentals.

Originally, the lake was stocked with the usual complement of largemouth bass, bluegills and channel catfish. There are remnants of northern pike and tiger muskies from previous stockings.

The largemouth bass have grown big with fish up to 13 pounds coming out of the lake.

The Department has a boat ramp just off of Route 662 across the lake from the park. Eventually, the park will build a full service concession.

Lake Curtis is west of Fredericksburg via Route 17 to Route 616. Turn right (north) and go to Route 662 and turn left (west) to the ramp. For information, call (703) 752-5632.

Lake Orange (Orange County)

This 124-acre Department-owned lake is intensively managed. The lake

is regularly fertilized to increase food production for the fish. A floating fishing pier serves the handicapped and shorebound anglers and marked fish attractors help anglers in boats.

Steinkoenig said there are good numbers of crappies, but they are small. Bluegills are abundant too, but small, while largemouth bass are only fair. There are lots of walleyes in the 2-3 lb. class. There are also an abundance of 2 lb. channel catfish.

The lake vaulted to prominence in 1989 when Ron Sprouse caught a 6 lb. 13 oz. state record white bass which is under consideration for a world record. Orange is not noted for having white bass and its speculated that is may have been a stray from previous stockings.

There is a new concession, picnic shelter, tables, grills, restrooms, boat rentals, shorefishing and nightfishing (open 24 hours on Fridays, Saturdays and holidays). For information, call (703) 672-3610. Orange is located off of Route 629 from either Route 522 or Route 20.

Burke Lake (Fairfax County)

Burke is a 218-acre lake within Burke Lake Park. It is probably the heaviest used lake in the state.

The lake has nice crappies, that average a half pound, and bluegills averaging a quarter pound. Burke has some nice walleyes, but they are seldom caught. Channel catfish average about two pounds and there are a few largemouth bass, redear and pumpkinseed sunfish as well. Blue catfish are being stocked.

The highlight here is the trophy musky population, many in the 28-30 pound range.

The lake has two boat ramps and about 130 rental boats available.

By the spring of 1990, the lake will have a lighted pier which will be accessible by the handicapped. The lake is located on Route 123 midway between Woodbridge and Fairfax. For information, call the park at (703) 323-6600.

Abel Reservoir (Stafford County)

"Abel Reservoir should be our

best walleye lake, but anglers haven't figured out how to catch them," says Steinkoenig. Probably one reason the 185-acre Abel is not fished very heavily is because the boat ramp is on the upper end, while the walleyes are down in the deep water at the lower end. The reservoir is long and riverine and becomes a long haul for a single electric motor.

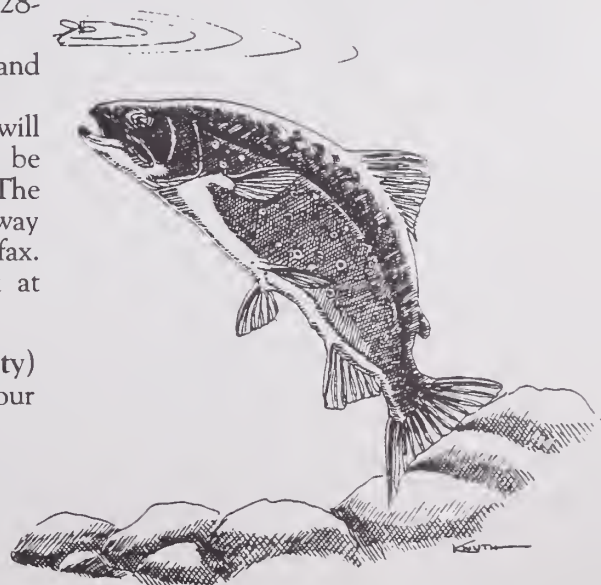
In addition to the excellent walleye populations, Abel has some big largemouth bass which prove difficult to catch because of the lack of structure. There are good crappie and chain pickerel populations and pickerel up to 4½ pounds are not uncommon. Bluegills, pumpkinseed sunfish and channel catfish round out the catchable menu.

To get to Abel Reservoir, take Route 17 north from Fredericksburg to Route 616; turn right and go to Route 651 and turn right. Or, take Route U.S. 1 north towards Stafford, left on Route 628, then left on Route 651.

Lake Brittle (Fauquier County)

Lake Brittle is the oldest Department-owned, manmade lake.

Steinkoenig says the 77-acre lake has a good redear population with some fish going close to a half pound. It also has walleyes, channel catfish that average just under 1½ lbs, and largemouth bass averaging around 1½ lbs. Currently, there is a 12-15



inch slot limit on largemouth to help control the high populations of stunted bluegills and crappies.

The lake has a couple fish shelters which are made by buoys. It also has a new ramp and a fishing pier. There is a concession which provides rental boats and electric motors.

Brittle gets a lot of fishing pressure due to its proximity to population centers. It is located off of Route 29 near New Baltimore, then Route 600 east to Route 676. For information, call (703) 349-1253.

Pelham Reservoir (Culpeper County)

Pelham is a 225-acre water supply reservoir for Culpeper, with a combination of forested and open, sloped banks along its shores. It's a shallow lake and a little muddy on its upper end, but has some deeper water towards the dam.

If you like crappie and channel catfish, Pelham is a place to go. Other species include largemouth bass, bluegill and pumpkinseed sunfish.

There is limited access with a public ramp on the lake's shallow end off of Route 718. Electric motors only are allowed and a permit is required from the Town of Culpeper (703) 825-4700. Pelham is located west of Culpeper by taking U.S. Route 29 west to Route 718 and turn right.

Mountain Run (Culpeper County)

Mountain Run is a Fredericksburg Water Supply Reservoir. The 160-acre lake has steep dropoffs along its shores. Largemouth bass provide the best fishing opportunity here, but there are also crappies, bluegills and channel catfish.

There is a dirt ramp and picnic shelter and playground adjacent to the lake, and limited shorefishing. Permits are required and can be obtained from the Fredericksburg Parks and Recreation Department (703) 373-9411, or the concession building (703) 786-8989. Take Route U.S. 29 south from Culpeper, turn right on Route 718 to Route 719.

Ni Reservoir (Spotsylvania County)

Ni Reservoir is a 417-acre Spotsylvania County Water Supply Reservoir. It has a decent channel catfish fishery. Presently, walleyes are being stocked and the lake has good catchable populations of fliers. There are fair largemouth bass, bluegill and crappie populations.

The lake has a concrete ramp, concession and boat rentals. From I-95 north, take Route 3 west to Route 627 south. For more information contact (703) 582-7151 or the concession at (703) 786-2284.

Lake Manassas (Prince William County)

Manassas is an 800-acre reservoir. The lake has big crappies, and spring fishing for them is good. There's a good population of largemouth bass and walleyes. Channel catfish are being stocked.

A new park, concession and pier are being built by the City of Manassas. From Route 29 take Route 215 east to Route 604 north.

Beaverdam Creek Reservoir (Loudoun County)

This 350-acre reservoir has a growing striped bass population.

Crappies are good in spring and the largemouth are generally small. Channel catfish are being stocked.

Access to the lake is primitive. The reservoir is on Route 659 north from Route 50.

Fairfax Reservoir (Fairfax County)

The lake has a number of facilities including a pool, campground and boat rentals. There is no ramp for private boats, but they can be carried in and launched.

The lake was stocked in 1983-84 with bluegills, largemouth bass, channel catfish and crappies. "It's a good lake to take the kids to learn how to fish," says Steinkoenig. The park is on Route 606 west from Route 7. For information, call (703) 471-5414.

Phelps Pond (Fauquier County)

This 3-acre pond is on the Game Department's Wildlife Management Area. It has good redear and channel catfish populations and also has largemouth bass and bluegills. Take Route 17 north from Fredericksburg, turn left (west) on Route 651.

Lake Thompson (Fauquier County)

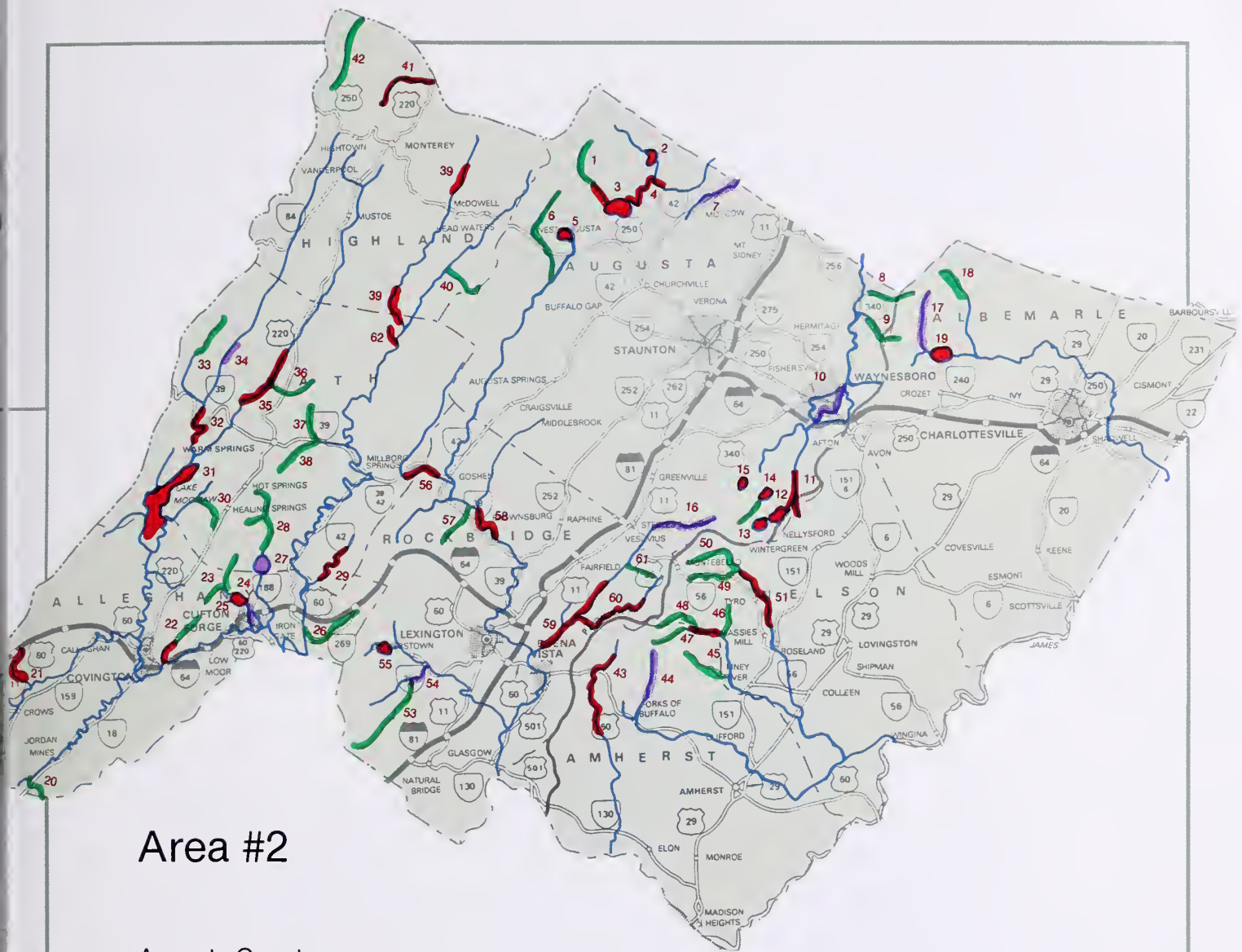
Lake Thompson is a 17-acre lake on the Game Department's G. R. Thompson Wildlife Management Area, that has smallmouth bass and channel catfish. Canoes or boats must be carried in a good distance. From Route 66, take Route 688 at Markham, north to the second parking area on left.



Department of Game and Inland Fisheries

P.O. Box 11104

Richmond, Virginia 23230-1104



Area #2

Augusta County

- (1) North River
- (2) Hearthstone Lake
- (3) Elkhorn Lake
- (4) North River
- (5) Braley Pond
- (6) Ramseys Draft
- (7) Mossy Creek
- (8) Meadow Run (SNP)
- (9) Paine Run (SNP)
- (10) South River
- (11) Back Creek
- (12) Lower Sherando River
- (13) Upper Sherando River
- (14) Mill Creek Reservoir
- (15) Coles Run Reservoir
- (16) St. Marys River

Albemarle County

- (17) N. Fk. Moormans River (SNP)
- (18) Doyles River (SNP)
- (19) Sugar Hollow Reservoir

Allegheny County

- (20) Shawvers Run
- (21) Jerrys Run
- (22) Pounding Mill Creek
- (23) Smith Creek

- (24) Clifton Forge Reservoir
- (25) Smith Creek
- (26) Simpson Creek

Bath County

- (27) Douthat Lake
- (28) Wilson Creek
- (29) Pads Creek
- (30) Cascades Creek
- (31) Lake Moomaw
- (32) Back Creek
- (33) Little Back Creek
- (34) Back Creek
- (35) Jackson River
- (36) Muddy Run
- (37) Jordan Run
- (38) Mares Runs
- (62) Spring Run

Highland County

- (39) Bullpasture River
- (40) Benson Run
- (41) S. Fk. Potomac River
- (42) Laurel Fork

Amherst County

- (43) Pedlar River
- (44) N. Fk. Buffalo River
- (45) Little Piney River
- (47) S. Fk. Piney River
- (48) N. Fk. Piney River

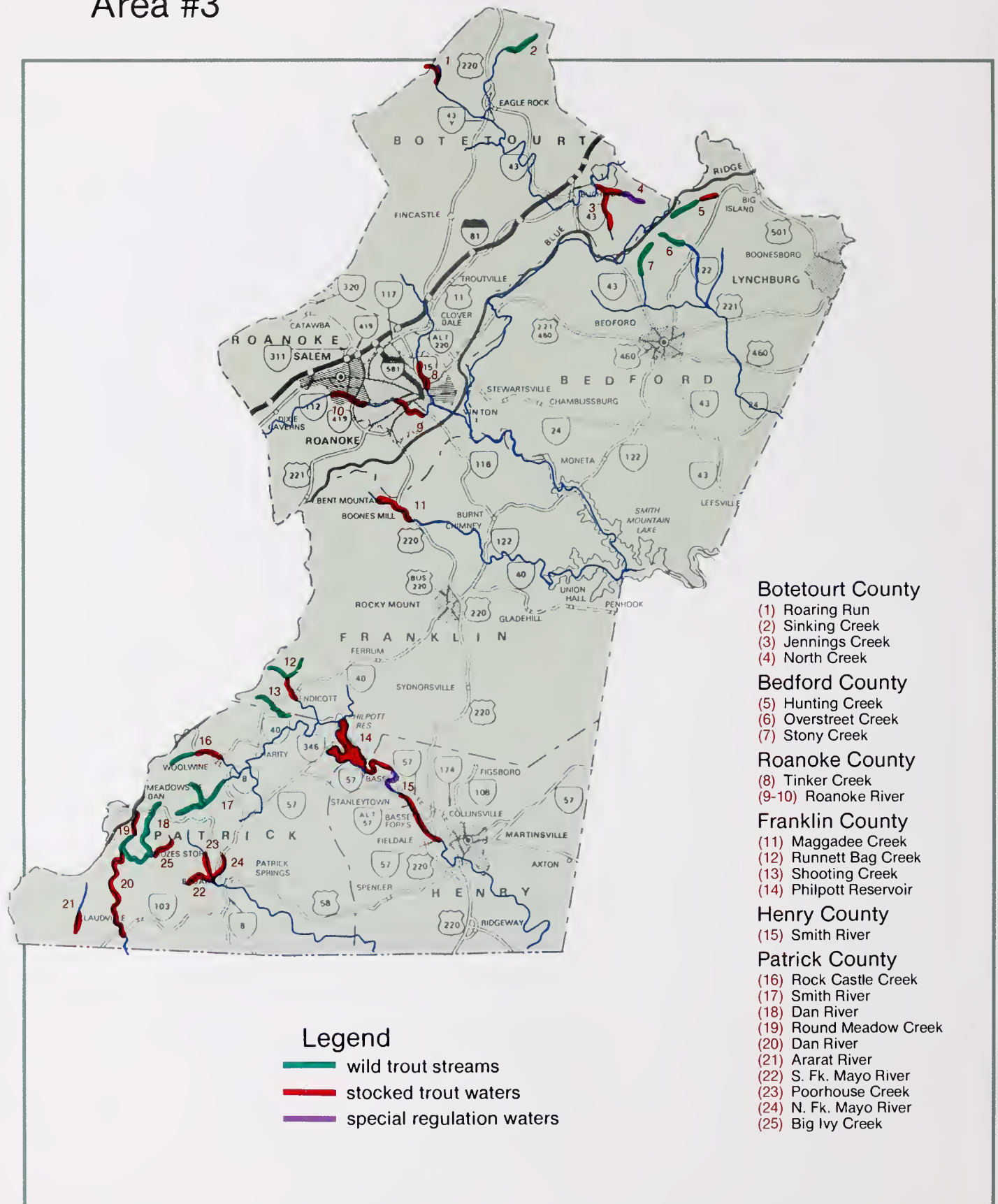
Nelson County

- (46) Shoe Creek
- (49) S. Fk. Tye River
- (50) N. Fk. Tye River
- (51) Tye River

Rockbridge County

- (53) S. Fk. Buffalo Creek
- (54) Buffalo Creek
- (55) Lexington Reservoir
- (56) Mill Creek
- (57) Guys Run
- (58) Maury River
- (59) South River
- (60) Irish Creek
- (61) Big Marys Creek

Area #3



Area #4

Craig County

- (1) Potts Creek
- (2) Barbours Creek
- (3) Meadow Creek

Giles County

- (4) Big Stony Creek
- (5) Little Stony Creek
- (6) Johns Creek
- (7) Mill Creek
- (8) Dismal Creek

Montgomery County

- (9) Craig Creek
- (10) Poverty Creek
- (11) Toms Creek
- (12) S. Fk. Roanoke River

Floyd County

- (13) Goose Creek
- (14) Little River
- (15) W. Fk. Little River
- (16) Howells Creek
- (17) Mira Fork
- (18) Indian Creek
- (19) Burkes Fork
- (20) Laurel Fork

Carroll County

- (21) Big Reed Island Creek
- (22) Snake Creek
- (23) Elk Spur Branch
- (24) Stewarts Creek
- (25) Crooked Creek
- (26) Little Reed Island Creek

Pulaski County

- (27) W. Fk. Peak Creek

Bland County

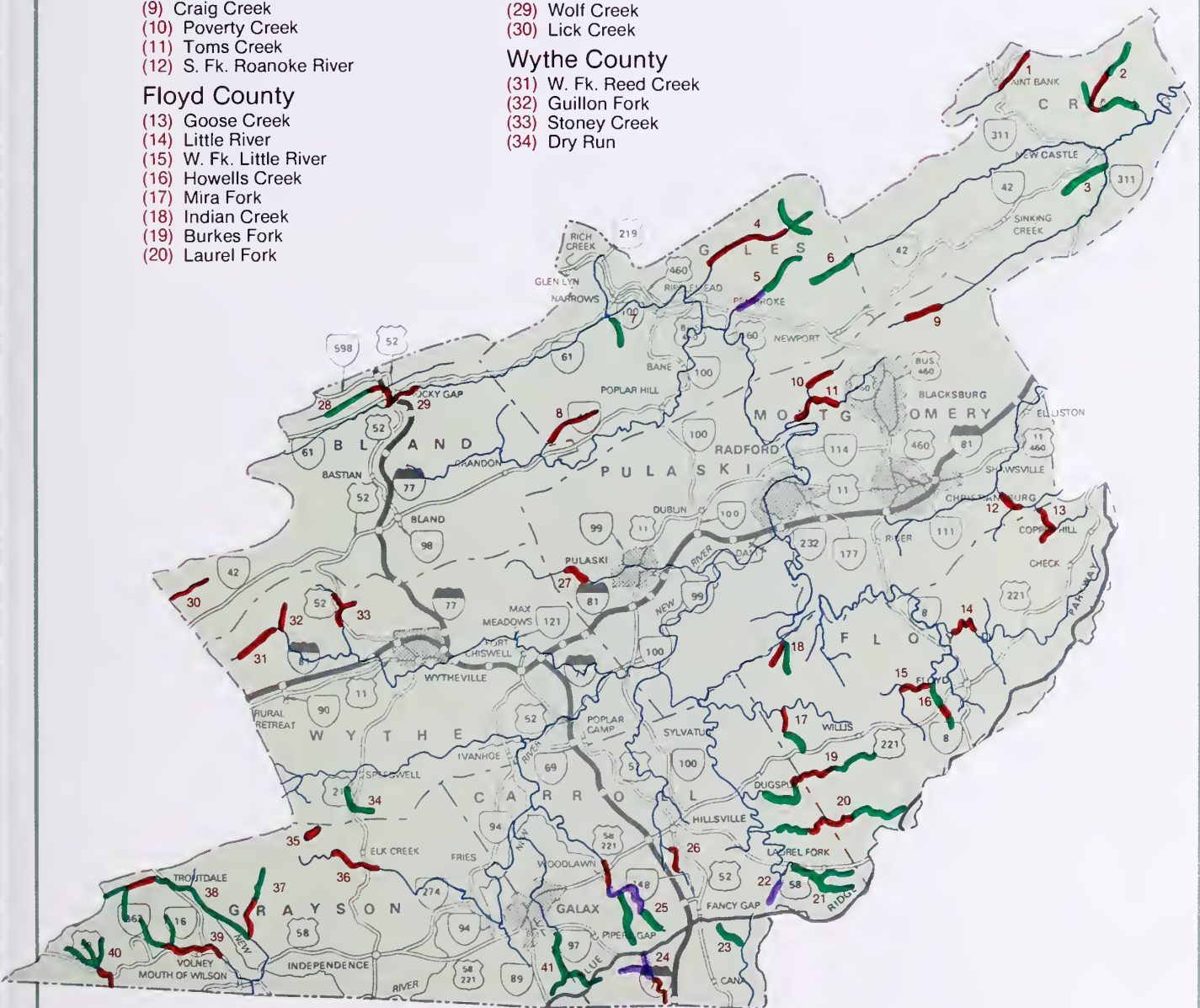
- (28) Laurel Fork Creek
- (29) Wolf Creek
- (30) Lick Creek

Wythe County

- (31) W. Fk. Reed Creek
- (32) Guillon Fork
- (33) Stoney Creek
- (34) Dry Run

Grayson County

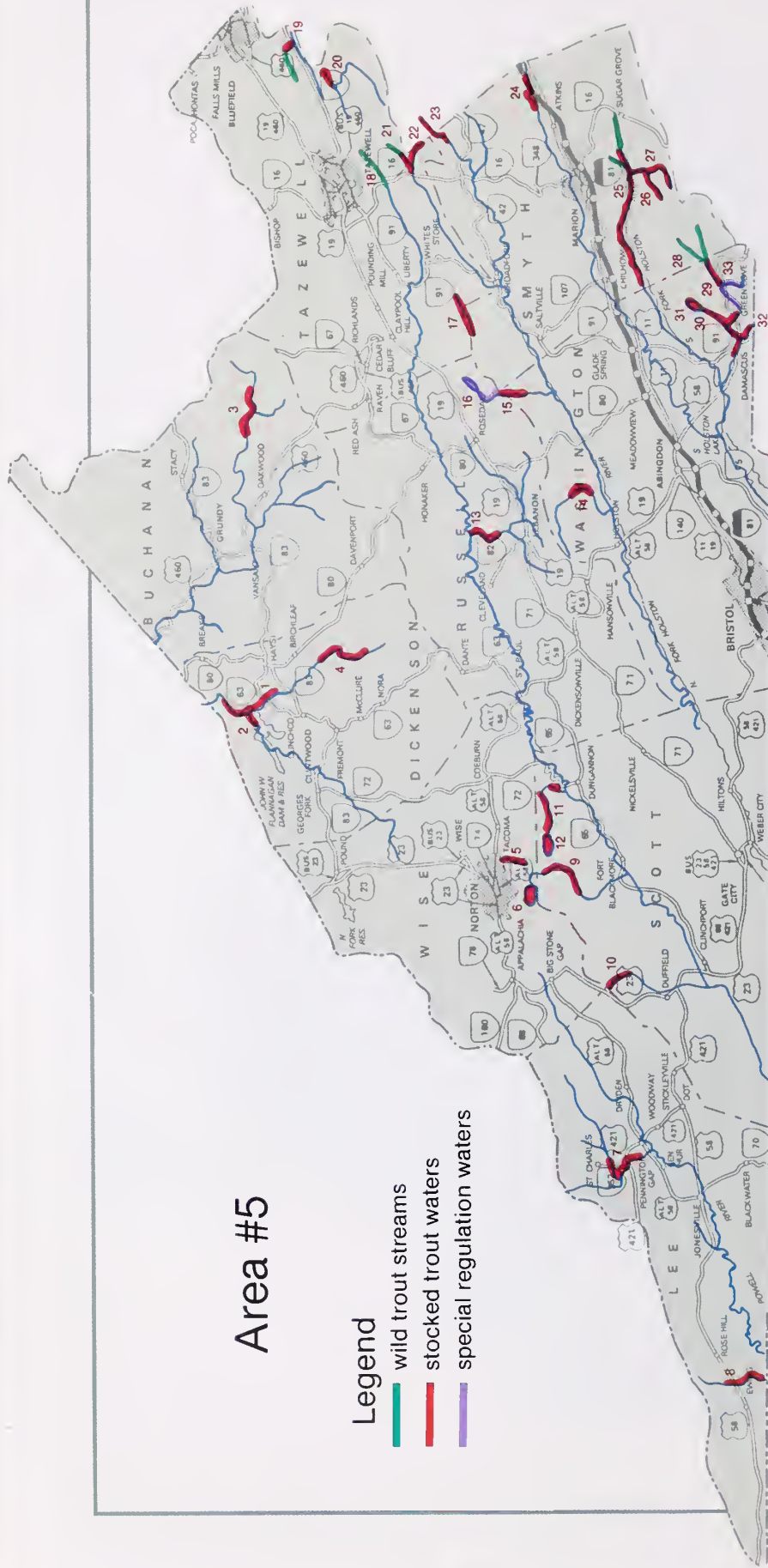
- (35) Hales Lake
- (36) Elk Creek
- (37) Middle Fox Creek
- (38) Fox Creek
- (39) Big Wilson Creek
- (40) Helton Creek
- (41) E. Fk. Chestnut Creek



Area #5

Legend

- wild trout streams
- stocked trout waters
- special regulation waters



Graphics by Emily Pels



The Department of Game and Inland Fisheries shall afford to all persons an equal access to Department programs and facilities without regard to race, color, religion, national origin, disability, sex or age. If you believe that you have been discriminated against in any program, activity or facility, please write to:

Virginia Department of Game and Inland Fisheries, Attn: Compliance Officer, 4010 West Broad Street, P.O. Box 11104, Richmond, Virginia 23230-1104.

Dickenson County

- (1) Russell Fork
- (2) Pound River
- (4) Frying Pan Creek

Buchanan County

- (3) Dismal River

Wise County

- (5) Clear Creek
- (6) High Knob Lake

Lee County

- (7) N. Fk. Powell River
- (8) Martins Creek

Scott County

- (9) Big Stoney Creek
- (10) Stock Creek
- (11) Little Stoney Creek
- (12) Bark Camp Lake

Russell County

- (13) Big Cedar Creek
- (16) Laurel Bed Lake

Washington County

- (14) Big Brumley Creek
- (15) Big Tumbling Creek
- (29) Whitetop Laurel
- (30) Straight Branch
- (31) Beartree Lake
- (32) Tennessee Laurel
- (33) Green Cove Creek

Tazewell County

- (17) Little Tumbling Creek
- (18) Maiden Spring Creek

Smyth County

- (19) Cove Creek
- (20) Wolf Creek
- (21) Roaring Fork
- (22) Laurel Creek
- (23) Lick Creek
- (24) Middle Fk. Holston River
- (25) S. Fk. Holston River
- (26) Hurricane Creek
- (27) Comer Creek
- (28) Little Laurel Creek



The benefits of a "shrunk" lawn; Maslowski photo.

"Honey, I Shrunk the Lawn"

by Nancy Hugo

Make your corner of the world more habitable to wildlife by shrinking your lawn, applying fewer chemicals and establishing native plants.

"On the estate of the true gentleman, the mansion must sit isolated in a vast sea of lawn." That's the ideal to which 18th century English landscapers aspired, and its influence is still powering fleets of lawn mowers today.

That lawns are status symbols, conventional holdovers from an earlier age, most of us know, but we mow on thinking that if lawns are anachronisms, at least they aren't

doing any harm. Besides, if we didn't grow grass, what would we grow?

A new approach to landscaping is both challenging the notion that lawns do no harm and offering exciting alternatives to turf. It is suggesting that the fertilizers and pesticides we use on our lawns are not only often unnecessary, they are harmful, and that the space we devote to lawns could be better used for plants that require less time and fewer resources. When you could grow a low maintenance ground cover that has value to wildlife and requires no irrigation, fertilizing, spraying, dethatching, or mowing, why grow grass? Why, indeed.

"Because I want a place where I can play catch with my grandchildren,"

my husband argues as he sees the size of our lawn shrinking. Good point and a valid reason to keep a little lawn. But a little lawn is more than enough for most families (and for most birds who like a grassy landing pad). What I'll argue for here is not getting rid of all lawns but for shrinking those we have, for maintaining them in a way that does no harm to the environment, and for adding plants that have wildlife value to the areas we've freed of turf.

To assess how much lawn you need, landscaper Carole Ottesen suggests asking yourself what you need it for.

"Instead of just assuming that lawn will be included in a landscape, ask 'What will I do with it besides mow

and trim it?" " she suggests. Is an occasional game of catch worth week-ends of mowing and trimming?

Thinking grass is the easiest thing you can grow is also a notion to rethink. Ask any extension agent: turf grass is the highest maintenance ground cover there is. According to researchers at the University of Kentucky's College of Agriculture, turf grasses cover 19 to 25 million acres of land in the United States, and they are the most intensively managed planting in the urban landscape. Lawns, golf courses, and other areas where dense, uniform turf is maintained receive regular applications of insecticides, herbicides, fungicides, and fertilizers, not to mention regular mowing, dethatching, raking, etc. You can grow most anything with less effort than you can grow grass.

The costs of intensive turf management also reach beyond our schedules and pocketbooks. It is the ecological side effects of the excessive use of fertilizers and pesticides that make lawn maintenance more than a matter of style. The frequent and excessive use of pesticides and fertilizers has side effects ranging from reduction in earthworm populations to waterfowl poisoning and groundwater contamination.

To give the devil his due, Barry Troutman, the delightful (and persuasive) Director of Education for the Professional Lawn Care Association of America, argues that "the dose and not the use of a substance determines its toxicity" and that lawn care products, properly applied, produce "beneficial environmental benefits." Ignoring the issue of whether or not lawn care products can provide environmental benefits (perfect turf does reduce erosion and filter impurities from water, but then so does crabgrass), the key here is "properly applied." Does anyone really believe all the homeowners leaving Hechingers on Saturday afternoon with their bags of 20-5-5 have had their soil tested and know that this is precisely the fertilizer they need in precisely the right amount? If so, how does one explain all those

bags of fertilizer leaving the store in April when most Virginia lawns are composed of cool season grasses that should be fertilized in the fall, not the spring?

Troutman is probably right when he argues that most professionals know more about properly applying fertilizers and pesticides than most homeowners, but even professionals can be less than responsible. Many contract lawn care companies operate on a mass production basis with the same herbicides, pesticides, and fertilizers applied to every lawn whether it needs it or not. This overuse of fertilizers can contribute to groundwater degradation and stream pollution; the overuse of pesticides can be an important cause of the growing resistance of pests to poisons.

Not only is it the homeowner's responsibility to hire a company that determines the need for what is applied before it is applied, but it is his responsibility to choose a company that uses the least harmful synthetic or organic chemicals (these are not always the least expensive ones) in doses no larger than is required. In response to consumer concerns about the excessive use of fertilizers and pesticides, some companies now offer fertilizer-only options, limited pesticide options, and dry options which use granular fertilizers to minimize drift onto neighboring property. In many states, what you apply to your lawn is no longer a matter of merely personal concern, either. Concerns about the effects of heavy fertilizer and pesticide applications to the environment, people, and pets have led to posting requirements in 14 states (Virginia is not among them) where lawn care companies must put signs in treated lawns informing neighbors what has been applied. One state even requires similar posting by homeowners who apply similar products.

If having a sign in the middle of the lawn suggesting "This lawn may be hazardous to your health" isn't enough to discourage the excessive use of fertilizers and pesticides, maybe knowing that you can have a healthy lawn without them is. For those who



*Shrinking your lawn not only means less maintenance, it also means less money.
Right: American robin on holly tree; photo by [unreadable]*

are not ready to give up their lawns entirely, "low input landscaping" (LIL) provides a way to have both green grass and clean consciences.

According to lawn expert W. M. Mitchell at the University of Delaware, low input landscaping means maintaining our lawns in a way that saves both time and money and improves environmental quality. The key to LIL is reducing plant stress rather than using chemicals to treat plant stress symptoms. According to Mitchell, if we provide grass nearly



ance for you, but more food and cover for wildlife. Left: Flowering quince; photo by Mel White. Roy E. Lowe. Background: Sunflowers; photo by Lou Hinshelwood.

optimal growing conditions, then diseases, pests and weeds are unlikely to be problems, and our lawns can be nearly self-sustaining.

Changing our perceptions about what constitutes a beautiful lawn will also go a long way toward reducing our dependence on pesticides and quick fix fertilizers. When we begin to see a healthy lawn growing in a healthy ecosystem as more beautiful than an immaculate lawn growing in a damaged ecosystem, we'll make better lawn maintenance decisions.

"We've got to be satisfied with less than picture perfect if we're going to be good conservators of the environment," says Hanover extension agent Ralph LaRue.

Shrinking the size of the areas we maintain as lawn can also benefit the environment, especially if we replace grass with low maintenance, drought-tolerant plants that have wildlife value.

Try giving up the areas that are hardest to mow first. The spot where you've been hitting the maple root

for years, the bank that's too steep to mow safely, the boggy area that's usually too wet to mow when it needs it most, these are the areas to free of turf first. Once you discover the virtues of using mulch, low maintenance ground cover, or native plants in these areas, you'll probably find yourself increasing the size of your no-mow areas and the size of the rest of your lawn shrinking by default.

But how do you get rid of the grass? One way is to do the opposite of what you've been doing to keep the grass growing. Rake leaves on the grass rather than off of it. For example, in an area of lawn under gum trees in my yard, I defined the area I wanted to stop mowing, cut the grass short in late summer, then started piling leaves on top of it. I used my own leaves and some of my neighbors', and by the following fall not only was the grass dead, I had a humus-rich medium into which I could plant bulbs. With fewer leaves, or more vigorous grass, you might need to cover the grass with newspaper, then your organic matter (leaves, straw, pine bark mulch, whatever). The newspaper will smother the grass and eventually decompose; the organic matter on top will not only help the decomposition process but keep the newspapers weighted down and out of sight. Tilling or turning the soil under with a shovel will also kill most grasses (except bermuda grass), but remember that nature abhors a vacuum and she will plant something else—probably weeds—where your grass was unless you mulch or establish other plants there first.

For other plants to grow, the choices are legion. There's nothing wrong with traditional ground covers like ivy, pachysandra, and creeping junipers (if you've been overusing fertilizers and pesticides to maintain your lawn, anything that replaces it will be a net asset), but for a yard that not only does no harm to the environment but contributes wildlife food and cover as well as the visual appeal of a natural landscape, consider landscaping your former lawn with native plants and shrubs.

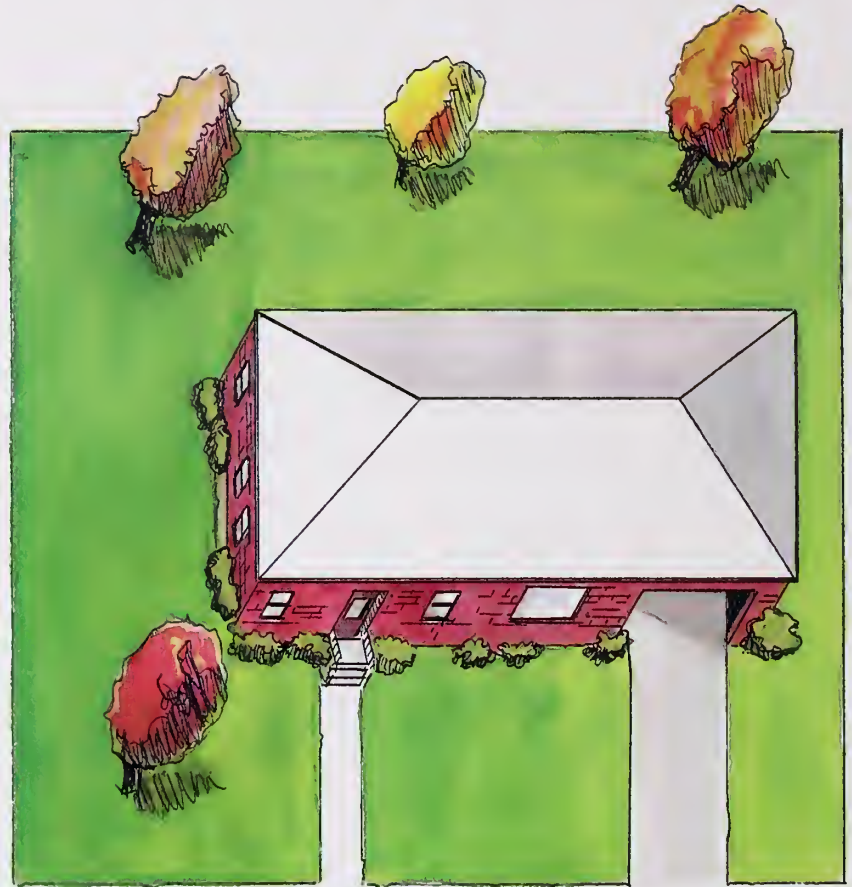
Before

Marie Davis, a landscape designer and native plant enthusiast from Manassas, Virginia, has transformed the typical suburban lawn pictured to the right into a haven for wildlife by replacing at least 1/3 of the grass with native plants, shrubs, and trees. All the plants she suggests are available from nurseries and mail-order catalogs. Inexpensive books and pamphlets that will give you other landscaping ideas are listed at the end of this article.

Conditions of light, soil, and moisture in your yard should affect your choice of plants to grow, and your best guide to what will succeed best in your area are the native plants growing under similar conditions in the nearby countryside. Remember that groundcovers don't have to be low spreading evergreens; a bank of shrubs 6 feet tall can serve as a groundcover.

Carole Ottesen suggests we take the inspiration for not only the content but the shape of what we plant from nature. Rather than jamming plants into rigid beds and borders, she recommends letting them divide themselves according to patterns of light, shade, soil type, and moisture conditions. Think masses and sweeps rather than geometric beds and borders. She also suggests using only a few types of plants, but lots of each type. Black-eyed Susans, yarrow, ferns, sedums, daylilies, and ornamental grasses are among her favorites.

In my yard, I picture great sweeps of bluebells, masses of coralberry, colonies of snakeroot, and blankets of partridgeberry where grass once grew. It will take a while to get there—I can inch my borders into my husband's playing fields only so fast—but at least I'm moving in a direction that feels more sympathetic to wildlife than the sea of grass I once grew. I also find myself picturing hedgerows instead of grass growing on median strips and masses of native



Design by Marie Davis, Illustrations by Emily Pels

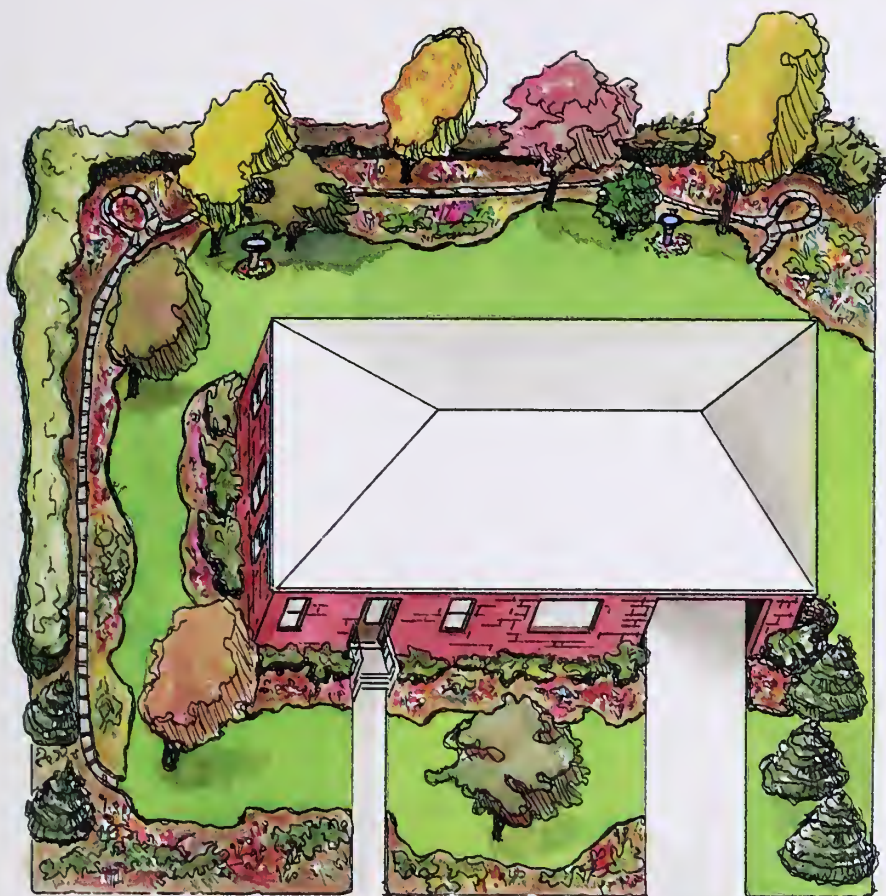
shrubs instead of grass edging parking lots, but I try to rein in my expectations. It took time to prove with lawns that we could beat back the wilderness, and it will take time to invite nature back in. □

Nancy Hugo is a freelance outdoor writer who lives in Ashland.

Other suggestions for landscaping with plants, shrubs, and trees of value to wildlife are included in the National Wildlife Federation's *Planting an Oasis for Wildlife* (available for \$8.95 plus \$3.50 shipping from the National Wildlife Federation, 1412 16th Street, N.W., Washington D.C., 20036-2266. Or call 1-800-432-6564 to order.) The National Wildlife Federation also offers a free packet of information on creating Backyard Wildlife Habitat which

you can obtain by writing the same address. Advice on acquiring native plants, maintaining a naturalistic garden, and designing with native plants are included in the information-rich *Gardening with Wildflowers and Native Plants* available from some bookstores and from the Brooklyn Botanic Garden (1000 Washington Avenue, Brooklyn, NY 11225) for \$5.95. A recent publication of the New England Wildflower Society includes articles on "Getting Started: Site Selection and Soil Preparation," "Naturalistic Design," and "Wild Combinations." The latter article includes plans for plantings in woodland areas which will be particularly useful to homeowners struggling unsuccessfully to grow grass under trees. For a copy, write the New England Wildflower Society, Garden in the Woods, Hemmeway Road, Framingham, MA 01701 for Wild Flower Notes, Vol 2 #2. Enclose \$6.50.

After



Legend

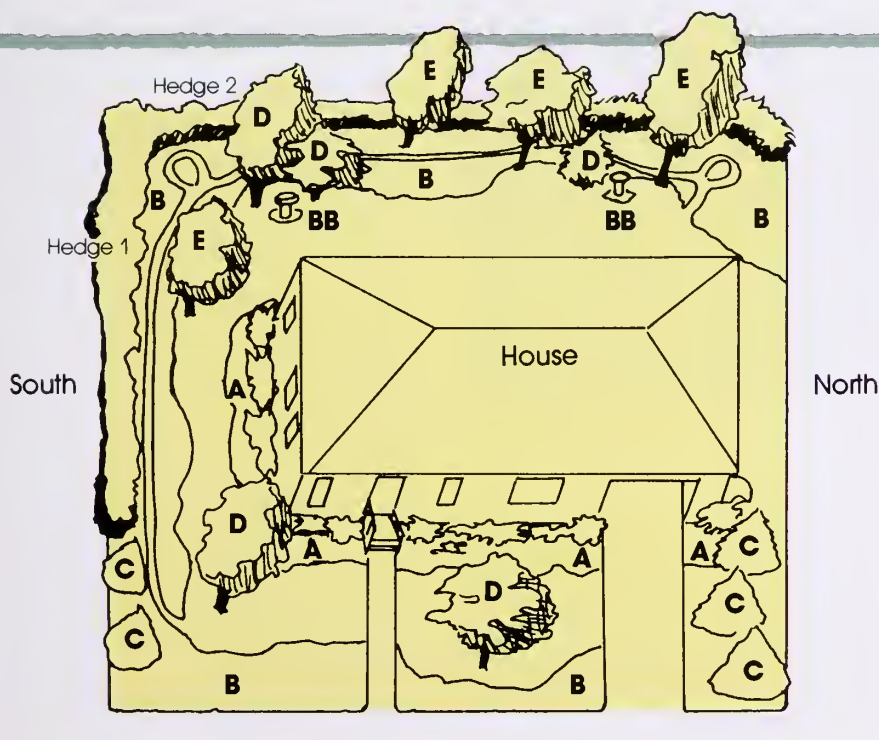
- A Foundation Plants
 - Japanese holly
 - Azaleas
 - Mahonia
 - Dwarf Burford hollies
- B Low growing shrubs
 - Cotoneaster
 - Low junipers
- C Pines
- D American holly, white dogwood, *crab-apple, or *hawthorne (*choose rust resistant varieties)
- E Scarlet oak, white oak, or ash (Avoid green ash cultivar "Marshall" which has no seeds for birds)
- BB birdbath
- Hedge 1: Mixed flowering shrubs: viburnum, mock orange, abelia, althea, butterfly bush, weigela
- Hedge 2: Canada hemlock and Eastern red cedar

Plants for shady parts of borders: violets, lily of-the-valley, ferns, wild blue phlox, white wood asters, columbine, foxglove. Mulch between plants with leaf mulch and allow plants to naturalize (self sow).

Plants for sunny parts of borders: bee balm, black-eyed Susans, purple coneflower, native sunflowers (*Helianthus tomentosus*), goldenrod, Dame's rocket, parsley clumps, sedum (*Sedum spectabilis*), liatris, coreopsis. Allow seed pods to stand through winter for birds.

Suggested Plan for Planting:

- Year 1: Plant Hedge 2 and 4 large trees (E)
- Year 2: Plant Hedge 1 and 5 trees (D)
- Year 3: Plant 5 trees (C), outline beds, and rototill in fall.
- Year 4: Plant herbaceous plants in side and back borders, and shrubs (B) in front border
- Year 5: Add to or replace existing foundation plants; add more herbaceous plants.



For a Healthy Lawn in a Healthy Ecosystem

by Nancy Hugo

1. Get a soil test. If you think of fertilizers as agricultural medicines (and the analogy fits because fertilizers have side effects), your soil test is the equivalent of a doctor's prescription. Theoretically, every homeowner should have his soil test results in hand when he goes to buy fertilizer to prove that he needs what he's buying and he's applying it in the proper dose. A soil test will also tell you if you need to adjust the pH of your soil. Soil pH affects the ability of plants to use nutrients, and you may be wasting fertilizer (not to mention contributing to groundwater or stream degradation) by applying fertilizer to a yard too acidic to use it. Soil tests are provided free by the VPI & SU Extension Service.

2. Don't mow too low. According to turf specialists, mowing height is probably the single most important factor in growing healthy grass. If you mow the grass too short, you destroy the food producing capability of the blades and make the grass more susceptible to disease, heat, and drought damage and weed infestation. Fescue shouldn't be cut below 2-4". Experts also say we should mow frequently enough that we are never cutting off more than 1/3 of the blade surface at one time.

3. Don't remove grass clippings. This must be the most frequently repeated and least often heeded lawn care advice. Contrary to popular belief, lawn clippings do not contribute significantly to thatch buildup, and if you're mowing frequently enough they won't smother the grass. Throwing away grass clippings throws



If you choose to keep a bit of the high-maintenance green stuff, take care of it knowledgeably; staff photo.

away nutrients that have to be replaced by fertilizing. It is estimated that just leaving your clippings on your lawn will reduce your need for nitrogen applications 20 to 30 percent after the first year and 35 to 45 percent after the second year.

Bagging your clippings is even more of a no-no. According to VPI soil scientist Tom Simpson, grass and leaves make up 15-20 percent of the total material in our landfills, and much of that material never breaks down because homeowners put it in plastic bags before sending it to the dump. Six states have banned both leaves and grass clippings from their landfills, but Simpson hopes Virginians will wise up before such legislation is necessary. If composted or left to decompose on the spot, both leaves and grass clippings could be enriching our soil instead of clogging our landfills.

4. Grow the grass species best adapted to your site. All the fertilizer in the world will not make a sun-loving grass do well in the shade. Consult your Extension Agent for recommendations.

5. Water only when necessary and in a way that limits runoff. Except during the severest droughts, most grasses common to Virginia will survive without watering. They may turn brown, but they're actually dormant, not dead, and they'll green up again when the rains come. If you insist on having a green lawn all summer, water only when necessary instead of on a schedule. Apply no more

than 1 inch of water per week in several deep waterings rather than in shallow watering which promotes shallow root growth. Direct sprinkler heads away from paved surfaces, especially if drainage is directly into the street or drainage ditch, because water that runs off your lawn carries with it nutrients that are valuable to the lawn but harmful to streams and reservoirs.

6. Apply the amounts of lime and fertilizer nutrients (nitrogen, phosphorus, and potassium) recommended in your soil test report—and no more. Remember that too much nitrogen can lead to thatch buildup, reduced drought tolerance, and increased disease susceptibility.

According to the Virginia Cooperative Extension Service's "Year Round Guide to Nutrient Management," fertilizers containing nitrogen should be applied to Virginia's cool season lawn grasses from September through December. Nitrogen in a slow release form is less likely to leach through the soil and contaminate groundwater than nitrogen that's quickly available.

In choosing between organic and synthetic fertilizers, remember that

organic materials not only add nutrients to the soil but reduce the chances of groundwater contamination by increasing the soil's water and nutrient holding capacity.

7. Avoid using pesticides on a preventive basis. Pesticides commonly applied to turf grasses include fungicides to kill fungi, insecticides to kill insects, and herbicides to kill weeds. Healthy turf can withstand invasions of most all of them without help. Remember that 90 percent of the insects in your lawn are not harmful and that even a healthy lawn will have some weeds. Consider it a badge of honor to have a dandelion here and there; it proves you've broken the herbicide habit.

If you do identify a pest problem, try cultural and biological controls before resorting to toxic chemicals. Above all, identify the pest you're dealing with, watch it carefully, and try cultural and biological controls before resorting to the spot application of a pesticide.

For more information, write or call for:

"Pesticides in Contract Lawn Maintenance," \$2.50, "Healthy Lawns without Toxic Chemicals," \$1.50, "Pesticides and the Naturalist," \$1.00 (\$4.50 for all), Rachel Carson Council, Inc., 8940 Jones Mill Road, Chevy Chase, MD 20815.

"Baybook, A Guide to Reducing Water Pollution at Home," Alliance for the Chesapeake Bay, 6600 York Rd., Baltimore, MD 21212 (Phone 310/377-6270. Free. Limited number available.

"Groundwater Quality and the Use of Lawn and Garden Chemicals by Homeowners," Virginia Cooperative Extension Service, publication 426-059. Call your local extension agent for a copy.

"Have a Healthy Lawn without Toxics," The Audubon Naturalist Society, 8940 Jones Mill Road, Chevy Chase, MD 20815. Free.

"The Virginia Gardener Year Round Guide to Nutrient Management," Virginia Cooperative Extension Service, publication 426-613. Call your local extension agent for a copy. □



Keeping some lawn along with your flowers, trees and shrubs and the rest of the wildlife you'd like to see in your backyard means that you must be responsible about your fertilizer and pesticide use. All too often overuse or excessive application of chemicals can wipe out both beneficial and pesty insects, along with birds and other wildlife. Above: Praying mantis on salvia plant; photo by Garry Walter.



photo by Lee Walker

Celebrate Earth Day

The Virginia Wildlife Federation is selling T-shirts to celebrate the 20th anniversary of Earth Day on April 22, 1990. With the colorful design commissioned by the National Wildlife Federation, the T-shirt sells for \$14, which includes postage and handling. Order yours in adult sizes: Small (34-36), Medium (38-40), Large (42-44), or X-Large (46-48). Send your check or money order to: Virginia Wildlife Federation, 4602 W. Grove Court, Virginia Beach, VA 23455. Allow 4-6 weeks delivery. □

Governor Wilder Proclaims National Wildlife Week April 22-28, 1990

Governor Douglas Wilder signed a proclamation designating April 22-28, 1990 as National Wildlife Week, and urged the support of every activity that will improve our understanding of the environment, how it functions, and the impact we have on it. He further affirmed the vital importance of this year's theme, "Earth Day Every Day—You Can Make a Difference!" □



photo by Mel White

Mount Rogers Naturalist Rally Scheduled

The 16th annual Mount Rogers Naturalist Rally will be held Friday and Saturday, May 11-12, in Konnarock, Virginia. Sponsored by the United States Forest Service, the Mount Rogers Citizens Development Corporation, and the Naturalist Rally Committee, the Rally will feature guest speaker Annemarie Steeman-van Diepenbeek of the Royal Dutch Society for Natural History. She will present a lecture and slides on the flora, fauna, and the technical adaptations made by naturalist organizations in her country. Approximately 20 field trips will be led by recognized experts in the fields of botany, geology, ornithology, and other areas. There will also be hikes to the top of Mount Rogers, the highest mountain in Virginia. The Rally will be of special interest to birdwatchers, students of natural history, nature photographers, and geologists, as well as anyone who enjoys the study of wildlife and the outdoors. The registration fee is \$3.00, plus \$5 for the home-cooked meal that accompanies the lecture on Friday, May 11th. For more information or to register, write

Carrie Sparks, Naturalist Rally Registrar, 301 Look Avenue, Marion, VA 24354. □

Fishing Clinics For Kids

On Saturday, June 2, six free fishing clinics for youngsters 6 through 12 will be held throughout the state. These clinics are scheduled for Lake Trashmore in Virginia Beach; Three Lakes Park in Richmond; Cameron Run Regional Park in Alexandria; Veterans Administration Hospital Lake in Roanoke; Hungry Mother State Park in Marion; and Lake Tams in Staunton. The goal of these clinics is to acquaint families with the fun and the basics of angling in Virginia. Fishing equipment and tackle will be provided for use to all participants. Attendance at each clinic is limited to the first 100 youngsters to preregister with an adult. Contact the following to register: Richmond—(804) 672-5100; Roanoke—(703) 857-7704; Alexandria—(703) 838-4343; Marion—(703) 783-3422; Virginia Beach—(804) 683-2868 or (804) 471-4884; Staunton (703) 332-9210, or contact Anne Skalski at the Virginia Department of Game and Inland Fisheries (1-800-252-7717). □

Governor Douglas Wilder signs 1990 National Wildlife Week proclamation. Looking on are (from l. to r.): Elizabeth Haskell, Secretary of Natural Resources; Suzi Gilley (VDGIF), Gladys Leggett (NWF), and Charlie Sledd (VDGIF).

"Who Are Those Guys?"

by Spike Knuth



Department biologists sampling a fish population; photo by Roy Edwards.

Maybe you've seen them, too, out there on your favorite lake; two or three guys decked out in rain gear and hip boots. They come motoring around the point in a john boat and slide up to a brightly colored float of some kind and begin to pull up an odd-looking black net that resembles a series of hoops. A sizeable number of squirming, splashing, thrashing fish are dumped from the net into a big washtub full of water. A closer look at the boat reveals the familiar shield emblem of the Department of Game and Inland Fisheries. A fish division crew, not a boatload of violators, is at work monitoring the fish population of your favorite lake.

John Kauffman, supervising fish biologist explains that fish management is more than just stocking fish; it is a careful evaluation of the resource and its potential. Before any body of water can be managed, a biologist must first determine what's there.

In order to find out "what's there," biologists must "sample" the various bodies of water on a fairly regular basis. Sampling involves collecting fish and recording significant data from them, including size distributions, length and weight relationships, condition factors, age and growth patterns and reproductive success. This information assists biologists in assessing fish populations, trends and quality.

To sample, or collect fish, a variety of techniques are used. Trap nets are the most effective for fish that move along the shoreline, especially those that spawn near shore early in spring. The funnel-shaped "confusion" entrances deter the fish from finding their way back out, so they continue to move deeper into the net. Fish such as pike, musky, walleye, crappie, redear and bluegills are trapped in this manner.

Electrofishing is used in summer to collect fish that inhabit shallower waters and aren't as active earlier in the year. Largemouth bass, bluegills and sunfish are caught in this manner.

Gill-netting is another method used to capture fish. It is used occasionally in spring, but mainly in fall. It is valuable in taking striped bass samplings.

Variable sized meshes enable biologists to sample various year classes as well as forage species.

Some lesser used methods of sampling fish include haul seining and trawling. Many anglers participate in the sampling process through creel surveys. These surveys "allow the biologist to see if his work has improved the angler's catch," according to Kauffman.

The actual fish collecting is only part of the sampling process. After collection, each fish must be weighed, measured and scale sample taken. In most cases, the fish are then released. Microscopic examination of the fish scales allows the biologist to age the fish. Fish scales have rings much like tree rings which reveal the fish's age. From this information the biologist can determine growth rates.

If you ever wondered what a fish biologist did in the winter months, now you know. Physical and chemical information is used to determine which fish species will best survive. If needed, species suited for that environment can be stocked.

The goal of the Department's fish management program is to have each lake, river, stream or reservoir produce the best and most productive fishing possible. The many methods of sampling are the ways in which biologists are able to monitor and assess fish populations—their quality and quantity—in a given lake to accomplish the goal. □

Bluebells

by Nancy Hugo

There are some places in Virginia, like the low woodlands along Bull Run, where Virginia bluebells carpet hundreds of acres. There are other places in Virginia, like the banks of Ballowe Creek behind our cabin, where the sight of a single clump is cause for celebration. As the steward of a clump, I can only imagine how it would feel to oversee acres, but should I live that long or be that lucky, I think I'd plop my chair by the stream bank and watch every minute of the bluebell's fleeting show.

For a few short weeks in April, Virginia bluebells bloom along stream banks, in low woods, in floodplains, and in gardens. Along with a host of other wildflowers we call spring ephemerals, bluebells bloom as the days lengthen and the sun warms the forest floor. Like performers taking a bow before the final curtain, they die back as the tree canopy above them closes. By midsummer they have disappeared—foliage and all.

Only a bloom as beautiful as a bluebell's could earn so much admiration in such a short time. The tubular flowers hang in clusters from gracefully nodding stems, and each bloom resembles a hooped petticoat with a delicate scallop around the hem. The flowers are pink in bud, changing to blue as they mature, and returning to pink following pollination. Occasionally, a white flower appears or a bloom stays pink throughout its blooming period.

Even the foliage of native bluebells is unusual. Unlike other members of the Borage Family which have hairy leaves, bluebells have smooth foliage. At the base of the plant, they have succulent 8" leaves, and 2-5" oblong leaves alternate up the stem. In some light these leaves look grey-green, at other times, particularly with the



Virginia bluebells; photo by Rob Simpson.

afternoon light coming through them, they're decidedly yellow-green. A purplish cast in the young foliage hints at the pink and blue to come in the flowers.

Bluebells have graced not only riverbanks but gardens since Colonial times. They are fairly easy to grow as long as you provide them conditions similar to the ones they enjoy in the wild. They need rich, moist soil and they like the light shade under tall hardwoods. Wildflower gardener Nancy Arrington has found that humus-rich garden soil which is moist in spring but dries out in summer suits them fine since they go dormant after blooming. She warns, though, that although they require spring moisture, their fleshy rhizomes will rot in a spot that stays boggy year round.

Not forgetting where you planted them is another key to growing bluebells, because, since no part of the

plant shows above ground for so much of the year, it's easy to forget where they are and slice them up with a shovel by accident. One way to avoid this is to plant them with companion plants like ferns or fall asters that will hold their spot while they're dormant. Bluebell plants are available from Virginia Natives (Wildside Farm, P.O. Box 18, Hume, VA 22639 Phone 703/364-1001).

Virginia bluebells have a long history of use not only as ornamentals but as medicinal plants. Their leaves were once used to treat pulmonary disorders, leading to the common name lungwort. The flavor of their leaves led to the common name oysterleaf. Other common names for our native bluebells include the Virginia cowslip and Roanoke bells.

John Custis of Williamsburg, who corresponded with Peter Collinson of London from 1734 to 1746 and sent him lots of Virginia's native plants, referred to Virginia bluebells as "Mountain blew cowslips." Thomas Jefferson grew bluebells at Monticello, and some 19th century garden writers referred to them as "Jefferson's blue funnel flowers." The Swedish botanist Linnaeus dubbed them *Mertensia virginica* to honor the 18th century German botanist Franz Martens and the colony of Virginia.

Because they reseed freely, Virginia bluebells are considered among the more secure of our native wildflowers, but their wetland habitat is often threatened and collectors sometimes wipe out entire colonies. Avoid clearing, draining, or disturbing their habitat and never dig the plants or their dormant rhizomes from the wild. What looks like plants free for the taking to a passerby may be a clump growing into a colony for a lady on Ballowe Creek. □

Can You Hear Me?

by William Antozzi, Boating Safety Officer

One of the most important devices on a boat is a marine VHF-FM radio-telephone. Anyone who has ever needed help while out there on the water will attest that the radio is a tremendous help.

Marine VHF-FM radio-telephones are monitored by the United States Coast Guard, the U.S. Coast Guard Auxiliary, the Coast Guard Reserve, by other boaters and by many other agencies.

A citizens band radio may be useful, and there is a designated emergency channel (channel 9) but there is usually plenty of traffic on CB bands and the transmissions are less clear. Also, because the CB radio is not routinely monitored by official patrol vessels or shore stations, it is less dependable. Plus, its typical range is only about 5 to 15 miles.

Channel 16 on the VHF-FM radio is the emergency channel and vessel operators should keep the radio on that channel to receive any emergency calls or warnings of navigational hazards. Channel 16 must be left clear for emergency use and when used to make radio contact, it must be cleared as soon as possible by switching to an appropriate frequency for further communication.

Contact between boats is normally made directly between vessels with compatible VHF equipment operating on the same channel. Most direct ship-to-ship calls are initiated on the distress safety and calling frequency—VHF Channel 16 (156.8 MHz), and when the called vessel answers, an intership frequency should be chosen on which to continue the call. All calls should be limited to 3 minutes except in an emergency.

When making a ship-to-ship call, announce the name of the vessel being called, and give your own call sign and vessel's name. When the call is completed, sign off with the name of your vessel and its call sign.

It is possible to use the VHF-FM radio to make telephone calls to and from shore telephones. The appropriate public service channel (see list) should be used. Channel 16 should not be employed for this purpose. You must call on their working frequency. A "marine operator" will usually handle the calls from ship-to-shore or shore-to-ship. They do not monitor channel 16.

The word *Mayday* must be used when emergency calls are made and must be repeated three times. The urgency word *Pan* is repeated three times, and for safety messages the word *Security*, repeated three times, is used. It is best to learn the international phonetic alphabet so that difficult words may be spelled phonetically for better understanding.

In order to send and receive properly, a good antenna is important. Many boaters purchase a good radio and then buy a poor antenna. The result is disappointing performance and lack of adequate range.

The unbroken line of sight between the sender and receiver is a critical factor. Large terrain features may interfere when they are in the line of sight between sender and receiver. Another problem with regular high-gain antennas is that when a boat rolls or pitches, part of the signal is directed into the water while part is sent skyward.

Often the biggest limiting factors to antenna performance is the lead-in coaxial cables. The typical cable labeled RG-58 is relatively inexpensive and its small diameter makes it easy to run through tight spaces. Transmitted power loss, however, makes it generally unsuited for runs longer than 25 feet. RG-8AU cable is preferred by performance conscious boaters. □

Channel Numbers

16
6
21, 23, 83
22
65, 66, 12, 73
14, 74, 20
13
68, 9, 72
69, 71, 78
72
24, 84, 25, 85, 26
86, 27, 87, 28
WX 1, 2, 3

Type of Communication

Distress, Safety & Calling. Intership & ship to coast
Intership Safety. Intership. Not to be used for non-safety intership communications
Coast Guard & Coast Guard Reserve & Coast Guard Auxiliary only
Communications with U.S. Coast Guard ship, coast, or aircraft stations
Port Operations. Intership & ship to coast
Navigational. Ship's bridge to ship's bridge
Non-commercial. Intership & ship to coast
Non-commercial. Ship to coast
Non-commercial. Intership
Public Correspondence. Ship to public coast
NOAA Weather Service. Ship receive only

by John Pagels

The Striped Skunk

Five steps away a striped skunk was approaching on my left as I started to cross Main Street in downtown Monterey. Headlights appeared from the right, and I stopped the lady in the pickup truck to warn her about the skunk. When she looked, the skunk had already ambled into the darkness, probably under a porch. As the disbelieving lady drove away, I heard unprintable mutterings.

Certainly the townspeople and the skunk itself would have appreciated my warning. Not surprisingly, the scientific name of the striped skunk, *Mephitis mephitis*, is from a Latin word meaning "bad odor." The paired anal glands that produce the musk are not unusual to members of the weasel family, but they're by all means most pronounced in skunks. In skunks, the powerful musk, known chemically as butylmercaptan, can be ejected nearly 20 feet by the action of muscles that squeeze the musk through two papilla that are extruded at the anal opening just prior to the discharge. To insure hitting the target with the musk, which is emitted either as a fine vapor or droplets, the skunk usually turns slightly when spraying so that the musk covers a greater area. The musk has a strong odor that besides being irritating in itself, is also very irritating to the eyes, perhaps causing temporary blindness because of the irritation. However, contrary to popular opinion, it does not cause blindness.

We can't say skunks don't warn their potential "victims." Unlike the pelage of most mammals which is colored to serve as camouflage, the bright black and white coloration of skunks serves to warn whomever or whatever might approach them. If an intruder approaches too fast, the striped skunk does its best to deter an

advance with threat postures and defensive behaviors that may include tail raising, foot stomping, back arching and backward shuffling. As a last resort, the skunk turns into a "U" shape with both ends facing the intruder. By then it's probably too late to move.

So, what animals would feed on skunks or bother them at all? Apparently not too many animals feed on them, but the great horned owl, both the red and gray fox, bobcat, coyote and mountain lion are among them. It's generally thought that these predators feed on skunks only when very hungry.

What do skunks feed on? First, if we take a close look at the weasel family, Mustelidae, we notice two lines that contain species that differ largely in their diet. The differences are reflected in the dentition and body form. One line includes the actual weasels, ferrets and the mink, species that have long slender bodies and cheek teeth with piercing and slicing edges adapted for their carnivorous diets. The other line, that includes the badger and skunks, is characterized by stocky bodies and their cheek teeth are somewhat more like ours, that is, adapted for a generalized diet. Although it's primarily insectivorous, the phrase, "whatever's in season" is quite appropriate when it comes to a skunk's diet. Most of the food is of animal origin, and in addition to insects, includes mice, eggs, snakes, salamanders and young birds. Plant material includes various fruits and berries and sometimes agricultural and garden species.

The habitat types in which the striped skunk is found are as variable

as its diet. One should not be surprised to find them in fields, woodlots, patches of brush, in spaces under rock fences, in vacant buildings and under porches in town. During periods of inactivity they are usually in burrows, often the refurbished burrows of such other animals as woodchucks, foxes and muskrats. Interestingly, striped skunks have been reported to winter in the same burrows with opossums, woodchucks and cottontail rabbits—but not unexpectedly, in different chambers of the burrow. Although skunks don't actually hibernate, they store considerable amounts of fat prior to winter. In cold periods they become lethargic and may go for extended periods without feeding, during which time they may lose up to 50 percent of their body weight.

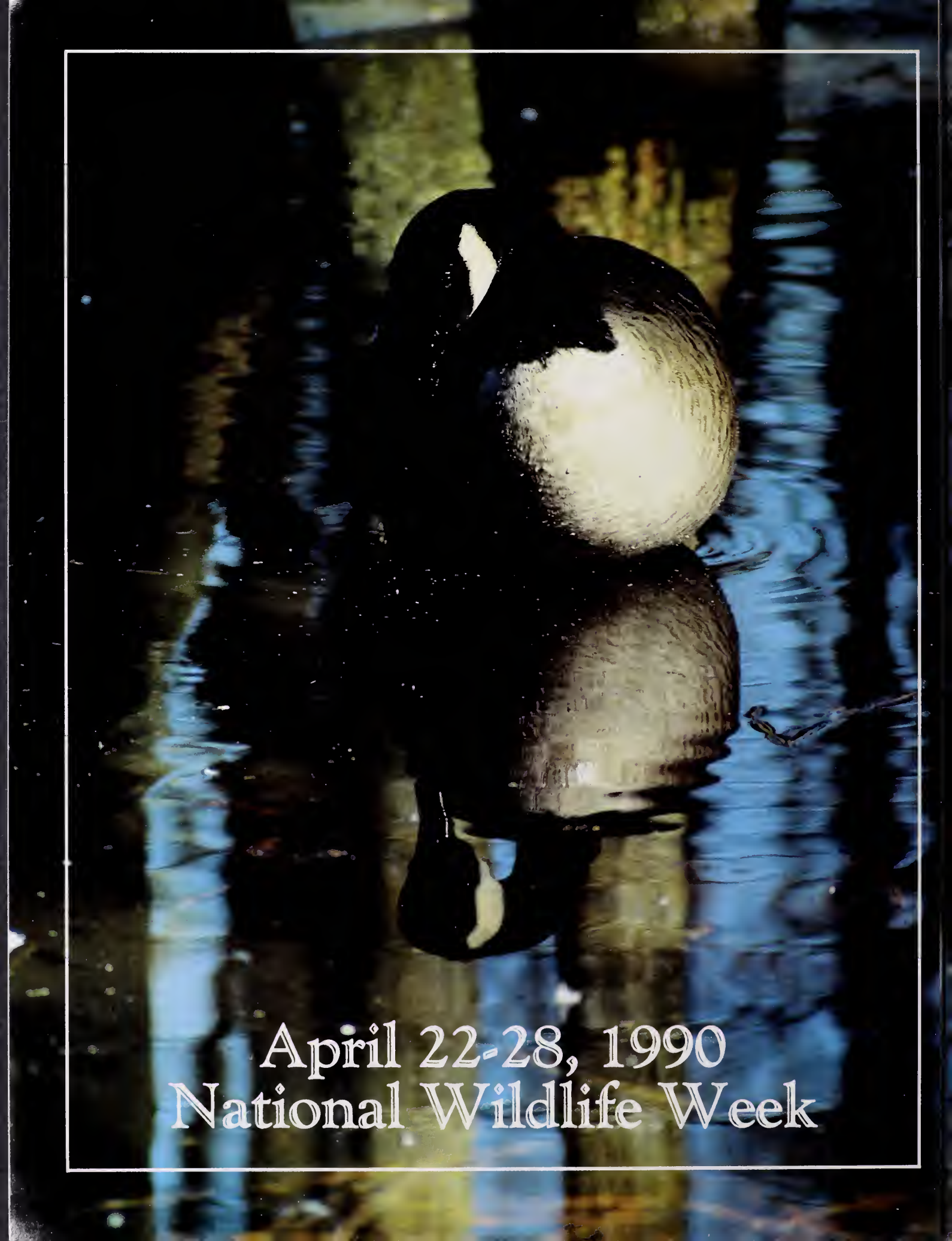
The young, from two to 10 per litter, are born in mid-spring and each weighs about one ounce. The musk is present at birth and even though the tiny animals don't open their eyes until about 3 weeks old, they can emit musk when only 8 days old.

Regardless of the skunk's age, in instances where intruders are "sprayed" it's often by accident, as when in the darkness a camper, thinking that a raccoon is feeding on the leftover pasta, bops one on the head with a leftover tent pole.

The big question has always been how to get the smell out of your clothes if you've been sprayed. I think the best course of action (but I might be confused) is to hide in the smoke as you burn your clothes on a bed of cedar branches. Then, put out the fire with tomato juice. Or is it . . . ? □

Dr. Pagels is a biologist at Virginia Commonwealth University.



A black and white photograph of a Canada goose swimming in water. The goose is seen from the side, with its head turned back towards its body. The water is dark and reflects the light, creating a clear reflection of the goose below it. The background is slightly blurred, showing some foliage or trees.

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